The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1634.—Vol. XXXVI. LONDON, SATURDAY, DECEMBER 15, 1866. {STAMPED ....SIXPENCE. {UNSTAMPED..FIVEPENCE.

Mining Exchange, London.

MINING EXCHANGE, LONDON.—As the rules of the Mining Exchange PROHIBIT all its MEMBERS from ADVERTISING MINING SHARES at FIXED PRICES, the Committee feel it their duty to notify that they have no means of offering redress to such of the public as may deal with those advertising shares at fixed prices.
A List of the Members can be had on application to the Secretary.

MR. JAMES CROFTS, STOCK AND SHAREBROKER,
No. 1, FINCH LANE, CORNHILL.
(Established 23 years.)
HOLDERS of mining shares DIFFICULT OF SALE in the OPEN MARKET may find purchasers for the same through Mr. CROFTS' agency. Also parties requiring ADVICE how to act in the DISPOSAL or ABANDONMENT of doubtful mining stocks may profitably avail of Mr. CROFTS' long experience on the market in all cases of doubt or difficulty, legal or otherwise.
Bankers: National Bank of Scotland, Finch-lane.

WILLIAM LANE (SUCCESSOR TO JAMES LANE), 44, THREADNEEDLE STREET, LONDON, E.C., STOCK AND SHARE-DEALER (Established Thirty Years), has FOR SALE the following SHARES:—

50 Chontales, £2 12s.	10 East Lovell, £9½.	75 Prince of Wales, 25s.
15 Clifford, £6.	10 Great Laxey, £17¾.	50 So. Wh. Grenville, 9s.
10 Chiverton.	15 Great Vor, £15¼.	50 Quebrada(£10 pd.),£1
50 Caldbeck Fells, 13s.	25 Gt. No. Laxey, 26s. 3d	100 Redmoor, 3s. 6d.
50 Cen. American, 12s 6d	50 Gt. Retallack, 9s. 6d.	30 South Darren, 26s.
25 Crebor, 11s. 3d.	50 Gwydyr Park, 1s. 6d.	50 S. Condurrow, 12s. 6d.
100 Drake Walls, 8s.	5 Herodsfoot, £33.	25 So. Callington, £2.
50 East del Rey, 2s.	20 Marke Valley, £3⅞.	2 Wheal Basset, £60.
5 East Basset, £22.	1 Minera, £140.	5 West Chiverton,£56½
25 East Carn Brea, £2¼.	50 N. Treskerby, £2 12s.	20 Wh. Grenville, 24s 9d
10 East Caradon, £5 2 6	20 No. Crofty, £3 1s. 3d.	2 Wheal Seton, £132.
50 East Grenville, £2 1 3	50 New Birch Tor, 6s. 9d.	10 West Caradon, £13½.

Approved references given in any town in the United Kingdom.
Bankers: London and County Bank.

MR. LELEAN, ENGLISH AND FOREIGN STOCK AND SHAREDEALER,
11, ROYAL EXCHANGE, LONDON, E.C.
Bankers: Robarts, Lubbock, and Co., Lombard-street.

GUIDE TO INVESTORS.—MR. LELEAN'S STOCK, SHARE, AND FINANCE REGISTER for December contains the fifth of a series of articles on the whole circle of Investments—British and Foreign Stocks and Loans, Bank and Finance, Railway and Insurance, Gas and Water, and Manufacturing and Commercial Shares; with such information as is necessary to guide intending investors amidst the shoals and quicksands of the multifarious species of investments that now present themselves; and a tabulated exhibition of all the dividend mines.
Published by Pottle and Son, 14 and 15, Royal Exchange, London, E.C.

CARNARVONSHIRE CONSOLIDATED, LIMITED, AND SHARES FULLY PAID.—MR. LELEAN recommends the immediate purchase of these shares, now quoted ¾ to 1¼ prem. An important discovery just made in one of the mines cannot fail to increase the price.
11, Royal Exchange, London, E.C.

MR. WILLIAM SEWARD, STOCK AND SHAREDEALER,
19, THROGMORTON STREET, LONDON, E.C.

MR. WILLIAM MARLBOROUGH, 1, GREAT ST. HELEN'S, BISHOPSGATE STREET, LONDON, E.C. (Established 12 years).

MR. JOHN LITTLE,
STOCK AND SHAREDEALER,
77, OLD BROAD STREET, LONDON, E.C. (late of Redruth).
Immediate attention to orders by telegraph or letter.
Prompt cash settlements.

MESSRS. WILSON, WARD, AND CO., STOCK AND SHAREDEALERS,
16, UNION COURT, OLD BROAD STREET, LONDON, E.C.
Can recommend two good mines for investment.

MR. WILLIAM WARD,
STOCK AND SHAREDEALER,
No. 29, THREADNEEDLE STREET, LONDON, E.C.

JAMES D. GENN AND CO., STOCK AND SHAREDEALERS,
3, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.

MR. J. B. REYNOLDS, 70 and 71, BISHOPSGATE STREET WITHIN, LONDON, E.C.
Mr. REYNOLDS will be very happy to advise as to the best channels for investment, and cautions his clients, and his clients only, against certain prejudicial statements concerning many properties of undoubted merit and long standing.

GEORGE RICE, SHAREDEALER, 78, OLD BROAD STREET, LONDON, E.C., (24 years' experience), Member of the Mining Exchange, DEALS in MINING SHARES at close market prices of the day, either as BUYER or SELLER, for cash or account.
GEORGE RICE having recently visited several of the principal mines in Cornwall and Devon, can furnish valuable and reliable information to speculators and shareholders, particularly as to the following mines:—

	Closing prices.		Closing prices.
Chiverton	£ 6⅞–£ 6¾	Great Vor	£14½–£15
Chiverton Moor	4½– 4¾	Marke Valley	3¾– 4
East Basset	20 – 21	North Treskerby	2⅜– 2⅝
East Grenville	2 – 2¼	Prince of Wales	23s. 6d– 24s. 6d.
East Lovell	8½– 9½	West Caradon	13 – 13½
East Russell	2½– 2¾	West Chiverton	54 – 55
East Caradon	4¾– 5	Wheal Grenville	22s. 6d– 23s. 6d.

Money advanced on mining shares.
Dec. 14, 1866. Bankers: Bank of England.

CHONTALES GOLD MINES (LIMITED).—GEORGE RICE deals largely in these shares, as BUYER or SELLER, at close market prices, and being in possession of most important information as to the prospects of the mines and market, can well advise both speculators and holders of the shares when to buy or sell to their advantage.—Dec. 14, 1866.

ST. JOHN DEL REY MINING COMPANY (LIMITED).—GEORGE RICE, 78, OLD BROAD STREET, LONDON, deals largely as BUYER or SELLER in these shares, and is now in a position to give good, sound, and certain profitable advice to all who hold or wish to invest in these shares. The report presented at the late general meeting should be thoroughly tested and weighed with great care.—Dec. 14, 1866.

MESSRS. CARNE AND CARTHEW,
BRITISH AND FOREIGN SHAREDEALERS, FINANCIAL AGENTS, NEGOTIATORS FOR THE SALE OF MINES AND MINING PROPERTY OF EVERY DESCRIPTION,
ST. JUST AND WEST CORNWALL MINING OFFICES, 12, NORTH BUILDINGS, BROAD STREET TERMINUS, E.C.

JOHN RISLEY, 32, LOMBARD STREET, and MINING EXCHANGE, LONDON, E.C., has SPECIAL BUSINESS in East Grenville, Wheal Buller, and West Caradon shares.

MR. G. D. SANDY, STOCK AND SHAREDEALER No. 48, THREADNEEDLE STREET, LONDON, E.C., TRANSACTS BUSINESS in EVERY DESCRIPTION of STOCK EXCHANGE SECURITIES, MINING and FINANCIAL ENTERPRISES, at close market prices.
Correct Daily Price List may be had on application.
Money advanced to any amount on legitimate stocks and shares.
References exchanged.

MR. GEORGE BUDGE, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established 18 years).

MR. WALTER TREGELLAS, 122, BISHOPSGATE STREET WITHIN, continues to deal, at close market prices, in all good sound DIVIDEND and PROGRESSIVE MINES, either for cash or the account.
BUSINESS in the FOLLOWING MINES:—Great Vor, Trelawny, Emily Henrietta, Cook's Kitchen, New Clifford, East Basset, West Tolgus, Camborne Vean, West Frances, Westminster, St. John del Rey, Don Pedro North del Rey, and Chontales.

MR. PETER WATSON, BRITISH AND FOREIGN STOCK AND SHAREDEALER,
79, OLD BROAD STREET, LONDON, E.C.
Bankers: The Alliance, and the Union Bank of London.

MR. EDWARD COOKE, STOCK AND SHAREDEALER
76, OLD BROAD STREET, LONDON, E.C.
Has SPECIAL BUSINESS in Chontales, Prince of Wales, East Lovell, Frank Mills, South Darren, and West Caradon.
Shares either for cash or fortnightly settlements.
Stock Exchange securities dealt in at close market prices.
Satisfactory references given in any town in the United Kingdom.
Bankers: Alliance Bank.

MR. C. A. POWELL, SHAREDEALER, 78, OLD BROAD STREET, and MINING EXCHANGE, LONDON, E.C.
Parties wishing to buy or sell shares will be dealt with at a fair margin on the market prices.
Mr. POWELL has SPECIAL BUSINESS in West Chiverton, Chiverton, Prince of Wales, Caldbeck Fells, Chiverton Moor, and Chontales.
Dec. 14, 1866. Bankers: Bank of England.

MR. E. GOMPERS, STOCK AND SHAREDEALER,
3, CROWN COURT, THREADNEEDLE STREET, LONDON.

MR. JOHN HOSKING, MINING ENGINEER,
(Late of Ashburton, Devon).
Mr. HOSKING, having had 20 years' practical experience, OFFERS HIS SERVICES as MINE SURVEYOR, VALUER of MINING MACHINERY, or to INSPECT any MINING PROPERTY, either at home or abroad. Terms on application.—14, Liverpool-street, London, E.C.

MESSRS. WARD AND JACKMAN,
STOCK AND SHAREDEALERS,
CUSHION COURT, OLD BROAD STREET, CITY, E.C.
Closing prices, Friday evening, Dec. 14.

	Buyers.	Sellers.		Buyers.	Sellers.
Chiverton	£ 6½–	£ 7	North Treskerby	£ 2⅜–	£ 2⅝
East Basset	21 –	23	New Tamar	1 –	1⅛
East Providence	¾–	1	North Crofty	2¾–	3
East Caradon	4¾–	5¼	Prosper United	2 –	2¼
East Lovell	9 –	9½	South Basset	4¼–	5¼
Great Vor	14¼–	14¾	West Caradon	13 –	14
Chontales	2½–	2¾	Wheal Buller	18 –	20
Prince of Wales	24s. –	26s.	West Chiverton	54 –	55

Messrs. WARD and JACKMAN refer their friends to their remarks on p. 820 respecting some of the above mines.
SHARES of every description BOUGHT or SOLD, for immediate cash or the fortnightly settlement.
Bankers: London and Westminster, Lothbury.

MATTHEW GREENE, STOCK AND SHAREDEALER,
ST. MICHAEL'S HOUSE, CORNHILL, LONDON, E.C.
MATTHEW GREENE is always prepared to deal at close nett prices in every description of Stock Exchange securities.
NEW TAMAR SILVER-LEAD.—The agent, Capt. Phillips, reports the lode in the rise to be worth 8 cwts. of rich silver-lead ore per fathom.
MATTHEW GREENE recommends the purchase of New Tamar, New Clifford, and Westminster shares.
MATTHEW GREENE is a BUYER of any part of 500 New Tamar, at 19s. 6d. per share. Bankers: Imperial Bank.

MR. JAMES HUME, 74, OLD BROAD STREET, LONDON, E.C. (Member of the Mining Exchange),
Executes orders in mining shares at nett prices, equivalent to 1¼ per cent. commission, and Stock Exchange securities at the usual charge.
All communications punctually attended to, and cash sent on receipt of transfer.
Bankers: The London Joint Stock Bank.

MR. T. ROSEWARNE, 81, OLD BROAD STREET, has business in the FOLLOWING SHARES for cash or "time on:"—

North Crofty.	*West Chiverton.	North Treskerby.
*Devon Consols.	*West Caradon.	Wheal Buller.
East Caradon.	*Chontales.	West Seton.
Herodsfoot.	*Bryn Gwiog.	*Wheal Seton.
Marke Valley.	*St. John del Rey.	Clifford.
South Caradon.	Caradon Consols.	East Lovell.
*Chiverton.	Carnarvonshire.	Great North Downs.
Frank Mills.	East Russell.	Bank of New Zealand.
*East Basset.	*Prince of Wales.	East Grenville.
	Drake Walls.	

AN OFFER WANTED for Okel Tor, New Trelawny, New Devon Consols, Lady Bertha, Old Gunnislake (Clitters), Pendeen Consols, Dale, West Maria and Fortescue.
BUYER of any part of 500 New Tamar, at 18s. 9d., for cash or "time on."
Money advanced on good mining shares.
Bankers: Bank of England and Consolidated.
Special information to be obtained on shares marked thus.*

MR. EDWARD BREWIS is a BUYER or SELLER, for Cash or Account, or for dealings end of the Year 1866, end of March, June, or Sept., 1867, in the undermentioned MINES:—

Chiverton.	Chiverton Moor.	Westminster.
West Chiverton.	East Bottle Hill.	Chontales Gold.
South Condurrow.	Prince of Wales.	West Caradon.
East Lovell.	Caldbeck Fells.	Clifford.
Frontino and Bolivia	North Treskerby.	Great Vor.
Grenville.	East Grenville.	Dyffryn Castell.
North Crofty.	East Russell.	Carn Camborne.
Lovell Consols.	Dyfngwm.	Harwood.
Cashwell.	Agar.	Wheal Uny.

No. 8, Warnford-court, Bank, E.C.

FOR SALE, the following shares at nett prices:—50 Wheal Crebor, 12s. 6d.; 20 South Condurrow, 13s.; 20 South Callington, 35s.; 10 West Caradon, £13½; 5 East Caradon, £5¼; 40 Prince of Wales, 26s.; 10 Great Laxey, £18; 30 Gwydyr Park, 2s.; 50 Dale, 2s. 6d.; 10 North Treskerby, £2⅝; 50 West St. Ives, 10s.; 25 North Dolcoath, 3s. 6d.; 100 East Bottle Hill, 5s.; 25 Great Retallack, 9s.; 10 Rose and Chiverton United.
Apply to Mr. R. EMERSON, 28, Great Winchester-street, London, E.C.
Advice given on the sale and purchase of shares.
Eighteen years' experience in Cornwall and twelve in London.

MESSRS. McNEILL AND LONG, STOCK, SHARE, AND MINING DEALERS,
31, THREADNEEDLE STREET, LONDON, E.C.

LOVELL CONSOLS MINE.—McNEILL AND LONG beg to direct attention to this mine, the prospects of which are such that they can recommend it as the best progressive mine in the Lovell district. In 1024 shares, of £3 each.
Reports by Capts. J. Nancarrow, Wm. Chappell, Stephen Harris, T. Curtis, W. R. Martin, and E. Kempthorne, can be received with every confidence, as they are trustworthy, and represent the real state and prospects of the mine.
The plans and sections—to be had on application—will, with the reports above mentioned, show that this mine must very shortly open out the further riches of Old Trevenen and Old Wheal Lovell lodes, which run through this sett, and upon which operations are at present being carried on. Though, as yet, only at a shallow depth, 12 fms. below the adit, the lode is worth from £8 to £10 per fathom, and promising well, both at this level and in sinking, to produce similar results to those of the adjacent mines—East Lovell, Old Trevenen, Old Wheal Lovell, and Trumpet Consols.
Taking these with other prospects, shown at length in the prospectus, remunerative results may fairly be calculated upon, and a thorough development is all that is required to place this mine in a dividend-paying state.
McNEILL and LONG recommend an immediate purchase, as the shares must shortly be much higher.
Applications to be made forthwith to Messrs. McNEILL and LONG, 31, Threadneedle-street, London, E.C., from whom prospectuses, with plans and sections, can be had, and rich specimens of tin ore seen at the offices.

INVESTMENT, LOAN, AND BANK AGENCY.—
Established 1839.
BANKERS—London and County Bank.
This Agency undertakes the investment of Capital in British and Foreign Government Stocks and Joint-stock Companies upon advantageous terms.
Every information afforded to Capitalists, Trustees, and others, who seek investments of a strictly safe and eligible character.
Loans granted on Stocks and Shares having a market value, interest allowed upon deposits, and every description of Bank and Money Agency business transacted. CHARLES PETERS, Sec.
No. 12, Clement's-lane, Lombard-street, London, E.C.

MR. CHARLES THOMAS,
MINING AGENT, GENERAL SHAREDEALER, AND AUCTIONEER
3, GREAT ST. HELEN'S, LONDON, E.C.

SALE OF MINING SHARES BY PUBLIC AUCTION.
MR. CHARLES THOMAS'S NEXT SALE of MINING PROPERTY and SHARES will be HELD at the London Tavern, on Thursday, the 3d day of January, 1867, at One o'clock precisely.
Persons desirous of offering shares on that day should give notice of same immediately, in order that their property may be advertised in the country papers. No orders received later than the 28th inst.
Address, 3, Great St. Helen's, Bishopsgate-street, London, E.C.

NORTH POOL MINE.—MR. CHARLES THOMAS has a NUMBER of SHARES FOR SALE, for which no reasonable offer will be refused.—3, Great St. Helen's, Bishopsgate-street, London, E.C.

MR. T. E. W. THOMAS, MINING AGENT AND GENERAL MINING SHAREDEALER, UNION CHAMBERS, UNION COURT, OLD BROAD STREET, LONDON, E.C.

MESSRS. LANE AND GIBBS, 2, ROYAL EXCHANGE, LONDON, E.C. (Members of the Mining Exchange), STOCK AND SHAREDEALERS, AND FINANCIAL AGENTS, transact business in all kinds of securities at closest nett prices for cash or account.
Parties of respectability can have transfers registered in their names previous to payment. Daily price list on application.
Bankers: London and County Bank.

MR. JOHN BATTERS, STOCK AND MINING SHAREBROKER, 13, THROGMORTON STREET, LONDON, E.C.

MR. THOMAS THOMPSON, MINING OFFICES,
12, OLD JEWRY CHAMBERS, LONDON, E.C.
Mr. THOMPTON recommends the immediate purchase of Westminster, New Tamar, and New Clifford shares.

LOVELL CONSOLS MINING COMPANY.—BARTLETT and CHAPMAN recommend the immediate purchase of these shares while they are obtainable at par, as they are certain to have a great rise. The property joins East Lovell, and is adjacent to Trumpet Consols, Trevenen, and Old Wheal Lovell, which have returned upwards of £900,000 worth of tin, and all the lodes from which these returns were made pass through the sett, one of which is now being worked, worth £10 per fm., and improving.
EXTRACTS FROM REPORTS.
Capt. NANCARROW states:—"The mine is just getting into working order, and its development might be commenced at once without an outlay in machinery, and with an unusual prospect of success."
Capts. JOHN CURTIS and STEPHEN HARRIS state:—"Seeing the numerous lodes this sett contains, and being in a good mining district, we have great confidence in recommending a vigorous prosecution of the whole of the lodes, and when properly wrought on will, we believe, prove remunerative."
Capt. CHAPPELL says:—"I consider it to be a speculation second to none in the district, as tin can be raised at once."
Capts. E. KEMPTHORNE and W. H. MARTIN concluded their report by stating that:—"The present prospects warrant a vigorous prosecution, and we confidently believe that it will lead to good results."
Prospectuses, containing detailed reports, plan of the district, and longitudinal section, forwarded on application. Samples of tin from the 12 fm. level can be inspected at the offices of the company, No. 2, Bucklesbury.

BARTLETT AND CHAPMAN, STOCK AND SHAREDEALERS, 2, BUCKLERSBURY, LONDON, E.C.
Business transacted in every description of stocks and shares at lowest market prices, free of commission.
All communications will receive immediate attention, either personally or by letter. Bankers: London and Westminster.

SHAREHOLDERS IN PUBLIC COMPANIES desirous of avoiding calls and further responsibility will find purchasers on applying to Messrs. BARRETT AND CO., 78, LOMBARD STREET, CITY, and No. 20, SPRING GARDENS, CHARING CROSS. Stocks, shares, mining, and other miscellaneous securities bought and sold. Investment Review on application. Cash advances made.

ROBERT LIBBY AND SON
MINE AND SHAREDEALERS,
CAMBORNE, CORNWALL.

MESSRS. R. C. CLIFTON AND CO., SHAREBROKERS, ALDINE CHAMBERS, PRINCESS STREET, MANCHESTER.
Mines inspected, and reports furnished. The best practical advice given to capitalists as to investments in mining.
Bankers: National Provincial Bank, Manchester.

MR. D. STICKLAND, M.E., having had upwards of 40 years' mining experience in Cornwall, several years of which he has had the entire management of mines therein, enables him to GIVE GOOD ADVICE thereon.
Mining, Railway, and other Shares bought, sold, or exchanged. Shares for sale in mines and quarries that will pay 15 to 20 per cent. per annum.
Offices, 5, Finsbury-street, London, E.C.

TO MINING AGENTS AND DIRECTORS OF LEAD MINING COMPANIES.
MESSRS. WESTON AND COLLINGBORN, of No. 18, PETER STREET, BRISTOL, having fitted up an establishment at SWINFORD, near BITTON, BRISTOL, for the SMELTING and REFINING of SILVER-LEAD and the other qualities of LEAD ORES, are now prepared to PURCHASE by TENDER, or otherwise, LEAD ORES in any quantities that may be offered to them.—Swinford, near Bitton, Gloucestershire, Oct. 5, 1866.

BRECONSHIRE, MID-WALES.—SLATE QUARRIES TO LET, near NEWBRIDGE-ON-WYE.—Apply to Mr. PRATT, Crickhowell.

TO CAPITALISTS.—ON SALE, FORTY SHARES of £10 each (fully paid-up), and no further liability, in a FIRST-CLASS MINING COMPANY (LIMITED).—For particulars, address "G. 53," Post-office, Manchester.

BRITISH AND FOREIGN INVESTMENT.—MR. THOMAS SPARGO, STOCK, SHARE, AND MINING BROKER, 224 and 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C., TRANSACTS EVERY DESCRIPTION OF BUSINESS in the PURCHASE and SALE of SHARES in BANKS, CANALS, MINES, RAILWAYS, BRIDGES, INSURANCES, and ALL OTHER DESCRIPTIONS of BRITISH and FOREIGN STOCK.
Mr. SPARGO has for sale shares in English mines paying from 12 to 20 per cent. upon the present price, in bi-monthly and quarterly dividends, as also a number of shares in good progressive mines, some of which he with confidence specially recommends to the public as sound investments.
Mr. SPARGO gives every information as to position and prospects of all mining undertakings, upon application, either personally or by letter, and is enabled, through his long experience, aided by his monthly visits to Cornwall, Devon, and Wales, to obtain the most reliable information as to the numerous mines in those districts. He will at all times give the best advice as to investments in mines, and, if necessary, inspect them himself; as in all cases he wishes to be guided by the intrinsic value of the property. Upon the receipt of 5s. he will furnish a selected list of dividend and progressive companies.
Mr. SPARGO has published the following works, viz.:—
Statistics and Observations upon the Mines of Cornwall and Devon, 1859—2s. 6d.

Ditto	ditto	ditto	1860, price 2s. 6d.
Ditto	ditto	ditto	1862, price 5s.
Ditto	ditto	ditto	1864, price 5s.
Ditto	ditto	ditto	1865, price 5s.

Physical, Geological, and Parish Map of Cornwall. Scale, three miles to an inch. Printed in three colours, showing distinctly the mining districts, the height of the hills, &c. Price 10s. 6d., on cloth and rollers.
Geological Maps of the various mining districts, showing the boundary line of each mine, with the lodes, cross-courses, and elvan courses by which it is traversed. Price 2s. 6d. each.
A Model, or Relief, Map of Cornwall (6 ft. 6 in. by 5 ft), presenting the names of every town and village, as also every characteristic point of the county. Price £5 5s.
Dividends received, calls paid, and all orders promptly negociated.
Commission 1¼ per cent.
Mr. SPARGO has 20 years' experience of mining, ten of which he was engaged in practical mining, and ten years he has transacted business in mining shares and stock, at 224 and 225, Gresham House, Old Broad-street, City, E.C.
Mr. SPARGO'S Statistics for 1866 are now ready.
Bankers: Metropolitan and Provincial Bank (Limited).

NEWSPAPER

Original Correspondence.

THE PROPOSED CHANNEL TUNNEL.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Having paid considerable attention to the project of running a tunnel under the English Channel, thereby connecting England with Continental Europe, I beg to hand you a few particulars, which I hope may be interesting. I believe soundings are being taken under the direction of Mr. Hawkshaw, the eminent engineer, and I only hope he may be able to arrive at a satisfactory result. That the tunnel would be an immense advantage to England, as well as to the whole of the Continent, there can be no doubt.

From the soundings taken by the Channel Telegraph Companies, it appears that the greatest depth of water in the Channel between Dover and Boulogne is 140 ft., the average being 60 ft. The strata composing the bed of the Channel are Oolite and Lias, rocks that are neither hard nor soft, and, therefore, favourable for mining. The length of the tunnel would be 28 miles, of which 22 miles would be under water, and 6 miles under land.

THE TUNNEL.—The tunnel should be tubular, with a diameter of 24 feet, lined with brickwork throughout, and laid with a double line of rails. If two small tunnels of 16 feet diameter, with a single line of rails in each, were preferred to one large tunnel, they would be better as regards strength, but as to ventilation they would not be so good. If the tunnel is placed at least 60 feet under the bed of the sea it would be quite safe, and there would be no danger of salt water ever reaching it.

THE DRAINAGE.—To drain the mineral water from the tunnel, I would run a drift or conduit of 6 feet in diameter, similar to the intercepting sewers of London. This drain would be a few feet under the tunnel, and ought to be asphalted and bricked all round, to keep the water of the surrounding strata out. The tunnel will be connected with the drift by wells at different points, which will completely drain it. The conduit will be highest at mid-channel, and fall gradually to the shore at each end, to allow the water to reach the pumping-shafts by gravitation.

THE PUMPING-SHAFTS.—These will be two in number—one on the shore near Dover, and the other near Boulogne. As these shafts will only be 110 feet deep there will be no difficulty in raising all the water produced. The water will be considerable while the drift is being made, but after it is completed the quantity will be much less, as the tunnel and drift will be almost, if not entirely, watertight. The first thing to be done in commencing the works is to sink the pumping-shafts, and make the drift. This will prove the ground, and enable the tunnel to be cut dry, thereby reducing the time and expense of making it. As the tunnel dips towards the centre of the Channel the water could only be drawn out of it by laying pipes along its whole length, which would not answer well, and that is the reason I have suggested the plan of a separate drain.

VENTILATION.—The best mode of ventilating will be to lay a pipe or flue in the bottom of the tunnel along its whole length, with openings at different places. This pipe will have a stop at mid-channel, and from it the air will be exhausted by steam-engines on each shore. By this means the foul air will be discharged, and replaced by fresh air from both ends of the tunnel, and from the air-shafts. I think this plan of ventilation will be found at once simple and effective.

AIR-SHAFTS.—Four shafts may be sunk in the Channel at the respective depths of water—60, 30, 60, and 70 feet. These shafts will be 3½, 4½, 3½, 7½, and 3 miles from each other respectively. It would have been very desirable to have dispensed with these shafts, but I found that could not be done. I prepared a plan without them, which involved the use of horse-power and the tunnel on a dead level, which would have answered the purpose, but I was obliged to give it up, as it would have taken 30 years to make, as it afforded only two openings from which to drive the tunnel. With four shafts in the water, ten tunnelling machines may be kept at work, which will reduce the time required to one-fourth of what it would otherwise be. If any of your correspondents can suggest how these air-shafts can be got rid of it would remove one great difficulty.

LOCOMOTION.—The tunnel, as proposed, may be worked by locomotives, like any other railways; the air-exhausting tube, assisted by the air-shafts, will be sufficient to ventilate it. The gradients of the line are moderately good, the steepest being 1 in 60.

I will now state how the air-shafts in the Channel may be made, if they are found indispensable. A sheet-iron double cylinder, with a flange at one end, to be set upright, with the flange end downwards, on the spot where the shaft is to be sunk, after the foundation has been laid, by means of diving bells. This cylinder would be 24 feet in diameter, and about 80 feet in height. A strong wall of masonry would require to be built round it at a distance of (say) 40 feet, which would form a Martello tower. The space between the wall and the cylinder would be partly filled up with the rock that is turned out of the shaft and tunnel. In this tower a pumping and winding apparatus would be erected, also a house for the workmen.

After the cylinder is bolted down and made water-tight the water will be pumped out. The inner cylinder will descend by its own weight with the sinking, until it reaches the line of the tunnel, when the tunnelling right and left will begin. As the depth to be sunk will only be 60 feet, that will be a simple affair. The stuff turned out will be thrown into the sea, which will form a small island, and protect the Martello tower from the shipping. As each of the towers will be a lighthouse, they will be extremely useful to guide vessels in their course through the Channel.

I understand that several patent tunnelling machines have been introduced in America, and one of the best must be applied, or the making of the tunnel would be very much retarded. Perhaps some of your American correspondents will favour us with their plans, accompanied with an estimate of the time and probable cost of making the proposed tunnel and drift.

If this great international scheme is thought practicable, the British and French Governments should at once offer a subsidy of 250,000*l.* per annum each for five years to any substantial company, either English or French, willing to undertake it. With that assistance capitalists might be induced to take it in hand, provided Mr. Hawkshaw, or any other equally eminent engineer, will guarantee its practicability.

In the above remarks I have proposed that the tunnel should be lined with brick, but, on making my calculations, I find it would be much better to line it with malleable iron-plates, of (say) 1 in. thick. With iron the tunnel can be made 4 ft. less in diameter, as it takes less room than brickwork, which will be a great saving of time and money. The iron tunnel can be sent down the shafts in lengths of (say) 7 yards, cut in halves longitudinally, with a flange on each edge like a walnut, only instead of the flange being outside it will be inside. The under half will be laid in its place first, after which the upper half will be put on the top of it, and bolted together at the flanges from the inside. Adopting the iron tunnel, the following will be a rough estimate of the entire cost of the works:—

Iron tunnel, 40,000 yards	£2,800,000
Tunnelling, ditto	800,000
Two shafts on shore, with engines for water and air, and air-pipe in tunnel	300,000
Drift, 40,000 yards	800,000
Four Martello towers, with shafts and engines	500,000
Tunnels on land, six miles	300,000
Extras	500,000
Total	£6,000,000

I calculate that each tunnelling-machine will cut 7 yards a-day on an average. That with ten machines will be 70 yards per day, or 21,000 yards per annum. At this rate the whole tunnel will be driven in little more than two years. As two years will be required for building the Martello towers, erecting the fixed engines, and sinking shafts before the tunnelling can be commenced, that will make the whole time required for the execution of the works four years from the date of commencement.

I send you a Coloured Plan, showing the tunnel with its fixed engines for air and water, its two shafts and four Martello towers, also the drift for drainage, which you are at liberty to show to any of your readers who take an interest in the subject.

41, *York-terrace, Regent's Park, Dec.* 10, 1866. A. ALISON.

COAL STATISTICS VERSUS COAL STRIKES.

SIR,—Your Yorkshire Correspondent voluntarily owned himself to be the author of the "Elucidation" of the coal trade, comparing Yorkshire with other districts in a way which you characterised as "startling;" and when I, as a "Looker-On," questioned his data, and proved that he had selected particular years of over-production, and compared them with particular years of under-production, and giving an *erroneous cause* why and wherefore, he finds fault with me. This is just what such men do. Instead of standing corrected for fault, so patent as to be undeniable, they get into a pet, charge something against their corrector, try to kick up a dust, and suppose they thus hide the errors they are not manly enough to admit. Instead of meeting my charges of "cooking figures," and instead of denying my charge that the coalmasters, and not the men, originated the strikes, he charges me with being a "legal luminary," hinting that I write for fees, and would make it appear, in last week's Journal, that I am false, not being the disinterested "Looker-On" I have declared myself to be, because Mr. John Holmes, of Hunslet, has taken the part of the men—advocated their cause, was treasurer to their association, recommended co-operation, &c. Now, all this may be quite true, and not at all incompatible with disinterestedness. It may be that, instead of gain in the ordinary way of business, both personal and pecuniary sacrifices have to be made; but as I am not a "legal luminary," so the "Looker-On" is not Mr. John Holmes, of Hunslet; and if I conjecture aright, that gentleman would hold himself sadly stigmatised with so many sins being thrust upon his head so falsely.

But what signifies it who I am, or that I made a slip in the *Leeds Mercury* and named the *iron* trade along with the coal question? I am inadvertently wrong in that; but does that cover the many *designed* fallacies of Mr. Ruglen? It is a pity that personalities should be thrown up to act as a shield or cover to hide the weakness of those who cannot maintain their own position, either in fact or inference, in a question of vital and public importance. But it is not thus I am to be drawn aside. Though not a writer for the press, I am too old a hunter to be misled by the herring of personalities trailed across my path to draw me off the scent of misstating facts and selecting and suppressing figures to substantiate a foregone fallacy.

I assert again that Mr. Ruglen took 1853 for his data of number of mines and *suppressed* production, and that he took 1857 for his groundwork of production and *suppressed* number of mines. I assert that he took years of over-production, with which the miners had nothing to do, and compared them with years of under-production, from which the men were only sufferers, the masters being both cause and means in both cases; and so arrived at very astonishing, but very false, conclusions. The conclusion was that Strikes and men's Unions were the whole and sole cause of the diminution of production in Yorkshire as compared with its increase of mines.

Mr. Ruglen went further. He compared Yorkshire with Northumberland, Durham, Derbyshire, and Lancashire; and, showing that they had increased in relation to mines over Yorkshire, he inferred that this was due to there being no Unions and Strikes in these districts; and, further, that the trade was being driven away to Switzerland, Belgium, &c., and all this was written in relation to trade contentions arising at Staveley and Clay Cross, because the men of those districts had lately formed Unions. At the time I was startled by the amazing aptness of the elucidations and the figures, and their results were truly portentious. But I felt they were incorrect in principle, even if true in detail. Not having the means of correction fully at hand I replied, as Mr. Ruglen says. But now having, at considerable trouble, "disinterestedly and for truth's sake alone," endeavoured to get at further facts, I will now direct your readers' attention to the statistics Mr. Ruglen should have placed before you, and it will be then seen what he has suppressed and what he has selected, and how very falsely he has misled the public as to the vital truth involved:—

	1853-4.	1855.	1861.	1862.	1863.	1864.	1865.
Northumberland and Durham:—							
Mines	225	275	271	279	280	289	292
Production	15,420,615	15,631,400	19,144,965	19,360,356	22,164,146	23,248,307	25,602,694
Yorkshire:—							
Mines	276	333	397	418	422	422	434
Production	7,260,500	7,717,470	9,374,600	9,255,500	9,402,600	8,809,600	9,260,750
Derbyshire:—							
Mines	123	171	158	155	153	154	154
Production	2,408,696	2,256,000	3,116,319	4,834,800	4,550,750	4,470,750	4,208,750
Lancashire:—							
Mines	333	357	373	407	379	379	342
Production	9,088,500	8,950,000	12,193,500	10,597,500	10,875,500	11,680,000	11,962,000
Scotland:—							
Mines	367	—	—	—	—	—	497
Production	7,448,000	—	—	—	—	—	12,650,000
Total in Great Britain, 1853—Miners, 2397; production, 64,661,401							
Total in Great Britain, 1865—Miners, 3256; production, 99,150,587							

* Nottinghamshire added, not included by Mr. Hunt.

† Clearly a mistake; *query*, 370? From the volumes of Mineral Returns by Professor Hunt, at the Philosophical Hall, Leeds.

‡ Mr. Morton, in his Report for 1864, gives the number of Yorkshire mines at 260 in 1850, and produces at 6,750,000 tons, which, up to 1864, have increased 47 per cent. in production, and 38 per cent. in number.

With this table before us, the best I can get, imperfect as it may be, we shall see how grossly imperfect Mr. Ruglen's selections were, in order to prove a general inference. Thus, he takes the number of Yorkshire mines at 276 in 1853, and at 422 in 1864, to show that the production of 1857 (8,875,440 tons) exceeded 1864 (8,809,600) by 65,840 tons; and that in relation to the number of mines Northumberland, Durham, Derbyshire, and Lancashire had greatly increased. The inference he wishes to prove is, that it is the Strikes and Unions of the men that have alone produced this decline of trade, and that it is the absence of these which has aroused Northumberland and Derbyshire, driven away from Yorkshire by chronic Strikes. But, strange to say, we have had Unions and Strikes in Northumberland and Durham; and in Lancashire, and also in Scotland, where mines and miners have increased more than in England, Unions of the men have been uniform, and Strikes constant; and in Cumberland, where I never heard of either a Strike or a Union, mines have increased less along with production than any other place above figured by Mr. Hunt. We see, also, that there is no necessary connection between the increase of production and the number of mines. For Derbyshire, with 171 mines in 1855, has only 154 now, a reduction of 17 mines, with an increase of production of 2,337,750 tons in 1865—a decrease of more than 10 per cent. in mines, and an increase of more than 100 per cent. in production. Nor have the mines of Northumberland, Durham, or Lancashire increased with production; while the mines in Yorkshire, from 1853 to 1856, went up from 276 to 399; an increase of 123, with production advanced only 1,614,940 tons—90 per cent. increase in mines in three years, with less than 15 per cent. of production in four years.

It is clear, thus, that the assumption that mines and yield should be corelative is a fallacy, and, therefore, to make any inference thus grounded leads to fallacy also. And the next inference, that the Strikes of Yorkshire have kept the production back, in relation to mines, is a fallacy still more gross. For between 1853 and 1857, when mines increased so much faster than production, the men had no Unions, and there was not one single Strike. Nor was it until 1858, when the masters declared that production exceeded demand, and so reduced coal, that they proposed a 15 per cent. reduction to the men, that the men thought about Union, or contemplated a Strike. The price of coal advanced very considerably from 1852 to 1857, and that stimulated enterprise to *over*-production; and it was *this*, and neither Unions nor Strikes, which have from that period to now so deranged the coal trade of Yorkshire. The Unions and Strikes were but the *effect* of deranged production, which the masters brought about, and which the men would constantly have regulated, so as to be corelative. And now that they have considerably succeeded, Yorkshire has obtained trade, prices, and advantages of working never before equalled. It never was so prosperous, and never so productive, as during the year 1866; and comparing this year with the year of Strikes and Lock-outs—brought about by the masters, while the Unions are now triumphant—with other districts, I again propheey that Yorkshire will prove A 1. But the whole idea of making comparisons with various districts, and one district at various times, without giving an adequate explanation of phenomena and causes, is extremely dangerous to both truth and reality.

Thus, the production of Durham has grown considerably over Yorkshire since 1855; and the fact that the millions of tons annually consumed by the growth of the Cleveland, Yorkshire, iron district is amply sufficient to account for it all, without even increase of population or export trade, for which it is more favourably situated. Durham coal joins Middlesbro' iron, and the Yorkshire coal is fifty miles away at the nearest. Thus Durham may increase production, without Yorkshire therefore declining. So that, from first to last, the whole that Mr. Ruglen "startles" us with as *new* is not true; while, to say what is true—that Strikes and Lock-outs tend to diminish production—is not new. Of course they do; but to say that the colliers of Yorkshire either originated Lock-outs or began Strikes, is the *very reverse* of the truth, and that I believe Mr. Ruglen knows well. He says he is not ignorant of these disasterous phenomena; then, why does he not say what he knows, and not impute what he knows to be *not* the truth, contrary to fact? Mr. Ruglen threatens the men with the evils of driving away the coal trade; whereas the fact is our exports of coal, in 1828, were only 2,483,161 tons; and, in 1846, it had grown up to 9,170,477 tons. It has very much increased since then, but I have not Mr. Hunt's tables to elucidate; but, on the authority of the *Sheffield Telegraph*, a few days ago, our general export trade has increased 300 per cent. during the last 20 years. If we go on at this rate we shall, or course, be utterly ruined by Strikes and Unions.

In conclusion, I will give a verbatim extract or two from Mr. Ruglen's so-called replies to mine. In the *Leeds Mercury*, Dec. 1, he says—"I can only say that I went by the books I had in my possession, and regret I had not been able to see Mr. Hunt's statement for 1865."—And on my charging him with making exceptional returns in the *Mining Journal* of Dec. 1, he replies in that of the 8th—"Up to the present time I have but seen Mr. Hunt's returns for 1865." I suppose it would be improper to call a writer for the press untruthful, but one can scarcely be blamed for allowing him to prove himself so. I leave Mr. Ruglen on the horns of his own dilemma; but I ask *you* if Mr. Hunt's returns of 1865, or any one return, could *possibly* give Mr. Ruglen the statistics he quotes *correctly*, to prove fallacies by. It matters little to the question who I am; but once more I assure your readers I am wholly disinterested in personal advantage, and sincerely desirous for the general truth and the greatest good.

A LOOKER-ON.

IMPROVEMENTS IN COAL MINING—No. I.

SIR,—In the month of September I forwarded you a letter for publication, which duly appeared in the Journal, as a postscript to which I promised, with your permission, to lay before your readers some differences, or improvements, in coal mining during the last 20 or 30 years. That promise has been delayed very much longer than I expected, owing to the following reasons:—1. The subject when commenced seemed to grow—*i.e.*, I found myself unable to give even a faint idea in an ordinary communication—hence the length of what I now send you on the subject. This, lengthy as it is, has had to be cut off in every department very far short of what I should like to have said. And many points ought to have had "sketched illustrations," to make them better understood, but these I have not supplied, being anxious to redeem my promise.—2. Since September, I have been busily engaged away from home, and had many lengthy reports to draw up. These, I trust, will serve as an apology for my long delay. Coal mining naturally divides itself into three distinct divisions—1. There is the mechanical department, including engines, and all the different mechanical appliances.—2. There is the winning department, including proving, sinking for, and winning the coal.—3. There is the working out the coal, or extracting it from its natural bed. Each of these three divisions is again subdivided into several departments. We will take them in their order, as given above, and notice first the improvements in the mechanical department.

In attempting to show the improvements, in all cases it will be necessary to adduce some instances or samples of what previously were, otherwise we should not so easily recognise the improvements. Let us see what has been done in the mode of raising coal. From my premises, it would appear that *all* coal is raised, yet such is not the case; there are thousands of tons of coal brought into the market that, strictly speaking, have not been raised or drawn from a depth. Take, for instance, South Wales, and some parts of North Lancashire and West Yorkshire, where coal is brought out at the foot of a hill, or on the mountain side, and deposited in barges or railway trucks, without ever being raised at all. To such places, or under such circumstances, the first and second divisions of my subject do not apply, as neither engines for raising coal, nor sinking to win, are required; but as such open levels are not the rule, only the exception, we will dispense with them, and consider our coal as having to be raised. For a long time coal has been raised by means of some sort of power—manual, horse, water, wind, and steam. Be it understood I am not going into the antiquity of this subject, only the improvements within the range of thirty years or so. Twenty years since might be seen drawing coal the ordinary hand-reel and horse-gin in many coal districts, but proprietors of a little more capital had, even then, steam-engines to draw their coal, and, doubtless, many more would have had them, but the idea of an engine had something very enormous in the way of expense about it. The engine in use was the "condensing," or "low-pressure," engine, which in expense, however so small, was something dreaded. There was so much consumed in the foundation, cutting water-goits, jack wells, &c., that kept many back who would now avail themselves of such engines, as some of our high-pressure ones, that can be taken to the spot, foundation and all complete, ready for use almost the same day they arrive.

As before stated, the engine generally in use at our collieries was the low-pressure beam-engine, with a driving-wheel (toothed) on the crank-shaft; and another cog-wheel on a second shaft, on which was the rope drum. In some instances the drum-shaft was the second from the crank-shaft. These second and third shafts from the first motion were so arranged that either, or both of them, could be put out of gear, while the other could be worked alone. This apparently had some advantages, but in practice the disadvantages were the majority. Each pit, or at all events each rope, had its own drum and shaft, so that if one pit had to be working and the others not, the latter's drums would be put out of gear. The disadvantages, or some of them, in this putting in and out of gear were manifested, by the engine-man's sliding the shaft out of gear before the weight at the end of the rope was secured, and no sooner would the teeth of the wheel be liberated than the weight at the end of the rope would set the shaft in motion. The engine-man would attempt to throw it in gear again, but the momentum would be sufficient to break the teeth of the cog-wheel, not only of the shaft making the revolutions, but also of the one from which it had just been drawn. Thus, with the breakage of the wheels, and the damage to the shaft's rigging, a few hundred pounds would be lost, besides the time consumed in reparation, and the loss of connection by being unable to supply the customers, and sometimes a heavy loss by way of "breach of contract." Apart from the multifarious gearing and appendages, the low-pressure engines—and, indeed, single engines of any kind—are not by any means, to say the least, so safe or well adapted for colliery purposes as the double engine. The best of single engines are

open to the objection of the dead centre point in the crank's journey, which, of course, occurs twice in every revolution. What miner of 30 years of age does not remember the unpleasant sensation when, in a cage or other contrivance, about to descend a shaft of being taken some distance in the wrong direction, as if the engine-man had forgotten himself, and was about to pull him over the pulley? And for the moment the thoughts uppermost in his mind, whether had he better leap out, or run the risk of being dashed down the shaft and killed. Or, again, of being part way down a shaft examining the sides, or doing some repairs, when if the engine should move half a stroke downwards instead of up, he would be precipitated to the bottom by the upsetting of the "scaffold" or "chamber," or by the displacement of a bearer, or some such thing? Or, again, in the very awkward position of one about to ascend the shaft with an open "sump" of some 18 or 20 feet deep full of water, when, after moving a little in the right direction, the engine, unable to mount the centre, would suddenly turn, and immerse both tub and occupants in the "sump?"

Many may read these lines whose minds will be harrowed by the painful recollection of the loss of friends and relatives by some one or all of these peculiar and most perilous positions. To the above there is the unpleasant jerking all the way up and down the shaft, causing an extra "wear and tear" of the machinery and ropes. All these are avoided, or do not appear, in the more modern double or coupled engine, usually employed at the better class of collieries. The advantage of which is to have the drum on the shaft to which the two cranks are attached, one at each end, put in such positions with each other that when one is at its dead point, or on the centre, the other is at its point of greatest efficiency, thus securing uniformity, and not being liable to those serious inconveniences previously mentioned. As the drum is on the first, and only revolutionary shaft, we may as well consider the drum and shaft as part of the engine. Observe the contrast in the simplicity, and yet the superiority, of the present high-pressure horizontal winding-engine, and the old, many-limbed, condensing beam-engine for drawing purposes. The former, or horizontal high-pressure engine, as named, consists simply of the active parts having, as it were, no dead weight to carry about. All there are being the piston, connecting-rod, and drum-shaft; nothing, as it were, to get out of order. The power applied acts directly upon the load, or work to be done; no fly-wheel, or anything but the drum, upon the first and only shaft. Indeed, so simple is the modern winding-engine, that few things of applied mechanics could be more so. On the centre of the drum's periphery is a surface for "break friction," to retard or stop the engine's motion in cases of emergency or accident. I think there is not a question that the double engine is the best for winding purposes, "always supposing that the engine is of sufficient power to work the shaft's journey with the first motion. The great desideratum for large winding-engines suitable for deep mines, is that they should be perfectly controlable. Break power, for instance, requires to our large engines to be of that magnitude that the ordinary manual brake is of little use, as the weight of the engine-man cannot be utilised as a sufficient retarding power, hence has arisen the necessity for some other method of efficiently controling brake power.

Of all the methods I am acquainted with, Ogden's Steam-Brake offers the greatest advantages, inasmuch as the auxiliary cylinder to work the brake can be made commensurate with the engine to any extent, while the provision for cutting off the steam from the winding-engine, before applying the brake, effectually provides that the retarding power of the brake shall in no way injure the machinery. This motion is continuous, indeed forms part of the engine. Connected with this brake of Ogden's there is also a connection to the brake power from the head-gear, over the pit, to prevent accidents from "creeping" off the catches in the direction of the pulley; therefore, judging from the few I have seen at work, I believe them to be an excellent protection from over-winding, and their use admits of the largest winding-engines being made perfectly controlable.

We will now proceed to the DRUM. This, like most other things, admits of variety. There are the flat-rope drum, the ordinary round-rope drum, the conical and the spiral drums—each has its advantages and disadvantages. The spiral drum seems to be the best in principle. How can it be otherwise? This kind of drum has been in use 20 years or more in a crude state, but in some of our best collieries the principle is brought to more practical perfection. When the load is at the bottom, the rope is on that end of the drum which is of the least diameter, so that when the weight or load is raised from the bottom, the leverage against the engine is little, and remains so for about a fifth, when the machinery will have arrived at a momentum sufficient to admit of the rope mounting the drum to the largest diameter without an extra pressure of steam. This kind of drum is most admirable in principle, and if not too much be attempted will work exceedingly well. The conical drum is in great favour in some districts, and, doubtless, has its merits, for its principle is exactly like the spiral, only its surface is plane, and the diameter gradually increases from the first coil to the last. This class of drum is much cheaper than the spiral, and ought to work well; but if too great an angle is attempted, serious consequences may follow, by the rope slipping down from the upper end to the lower. There have been several accidents owing to this, and some of them fatal, so that wherever a conical drum is applied, it requires great care and some experience in its construction. A very good drum, and simple in its construction, is the ordinary round-rope drum, even and plane, varying in diameter according to the power of the engine, and weight to be drawn. I have seen as large as 24 feet diameter on the crank-shaft. There are some of these with iron-plated beds for the rope instead of the wooden "laggings;" the latter being of soft material, requires frequent renewing and constant watching. The flat-rope drum admits of little variety, its principle being the same, and only one way of applying it. This, although of remoter time than the round-rope drum, in principle is better than its modern rival—*i.e.*, so far as the drum itself is concerned. The principle is similar to the conical or spiral, the least diameter of the drum always at the dead lift or start from the bottom, which gradually increases as the load ascends; and where two flat ropes are on the same shaft there is another advantage, in the way of balance. The empty rope beginning its descent from the top, is at its largest diameter, consequently has the advantage of the longest radius, acting as a lever with or for the engine at the time the greatest power is required to start from the bottom with the load of the other rope. There are several reasons, though, why a round rope is preferable to a flat one, and as such is the case we must consider the round rope an improvement. A COLLIERY VIEWER.

[*To be continued in next week's Journal.*]

THE SAFETY-LAMP, AND THE FIRE-DAMP INDICATOR.

SIR,—I give your correspondent, "M. E.," every credit for leniency towards the inventor of the Fire-Damp Indicator, and acknowledge that inventors generally have frequently good cause to complain that their improvements are not fully appreciated; and as both "M. E." and myself are more accustomed to the use of the lamp than to that of the indicator, I should be glad if "M. E." would answer one or two queries, which may elicit a large amount of truth. What would "M. E." think of undertaking the examination of a pit he knew to be fiery with no other means of indicating the presence or absence of fire-damp than a lamp, which (regardless of the quantity of fire-damp present) ceased to burn blue five minutes after it was taken into the pit? Yet this is precisely the defect of the indicator—its indications are not permanent. Nor is this all. Were I to meet "M. E.," say, at at the bottom of Monkwearmouth pit, and hand him a Davy lamp, he would have no objection to accompany me to any part of the workings, until the lamp warned us that it was desirable not to be too rash. He would not require to know whether the lamp had previously been burning in the lamp cabin or at surface.

In the case of the indicator the matter is totally different. I may give him the most expensive indicator that can be constructed, but unless I supply him with air-bags containing air of known purity, he cannot tell me within 1 or 2 per cent. how much fire-damp is present, or whether the air is pure or explosive. The indicator only indicates comparatively, and not positively; it would indicate pure air or zero, whether in pure oxygen or in pure fire-damp. This Mr. Ansell admits; and it is this that he must remedy. To say that we must dip the indicator in an air-bag, or return to the intake after each indication, is practically a condemnation of the machine, and it is solely upon these grounds that I consider the compulsory introduction of the indicator undesirable.—*Durham, Dec.* 10. CARBON.

DISCOVERY OF THE SODIUM AMALGAMATION PROCESS.

SIR,—Of all controversies, those relating to priority of discovery are the most uninteresting, both to the claimants and to the public; the most difficult to settle, and the most unsatisfactory when settled. It has been my misfortune already to have passed through one such controversy, in which the points at issue turned upon the question whether April, 1861, or May, 1862, happened first in chronological order, and whether May 1 occurred before or after May 16; and I have been resigned, after a wearying and harassing argument, extending over many months, to abandon the contest for continental recognition as hopeless; for, in spite of all my efforts, it appears to have been decided, by the weight of academic and personal influence, that in French scientific works 13 months are to be blotted out of the chronology of discovery.

It seems as if a similar controversy were imminent with respect to sodium amalgamation. Some courteous, straightforward, and most flattering remarks* of Prof. Henry Wurtz, of New York, have been either interpreted by certain writers into an insinuation of unjustifiable misappropriation,† a sufficient reason for the entire suppression of my name.‡

I fear that anything I may adduce in answer to these remarks will fail to neutralise their effect. An error, once circulated by the press, retains the vitality of its injurious influence to all time, for an accusation of this sort has a piquancy which its refutation seldom possesses. And were it not that my silence, actuated really by utter weariness and detestation of barren and fruitless controversy, has already been misconstrued into concession, and that persisted in longer it might seem to justify that interpretation, I should assuredly have allowed such trifles to pass unnoticed.

In reply, then, to Prof. Wurtz's remark about concession, may I be allowed to state that in questions of priority of discovery it is quite out of the power of either claimant to make concessions to the other? The settlement of the question must rest upon certain dates and facts; and all we can do is to state these data clearly and temperately, and to receive with equanimity whatever decision may logically be deduced from them; therefore, the "concession" of a date, or fact, means the suppression of a truth.

It is a very common error in scientific ethics that "priority of publication constitutes priority of discovery." I venture to say that this rule has no existence, and, from the nature of the case, it can and ought to have none. Prof. Asa Gray, one of the leading scientific men in the United States, has commented very clearly on this point, and his decision is now universally accepted. He says§—"The fact of a discovery is to be established by evidence, and no sort of evidence by which it may be established can be excluded. Abundant illustrations of this may be adduced from the history of almost every science. The rule which has here been misapprehended is one which fixes nomenclature. Naturalists have established, and physicists adopted, the very necessary rule that the publication is essential to give reality to a name, that the name first published takes precedence. The discovery of a fact or thing, and the imposition of a name, are two different matters, and not rarely dissociated. The first is to be established by any good evidence, the second is governed by an arbitrary but most just rule."

The date of a discovery is a question of *fact*, and not a question of nomenclature, and may be authenticated by whatever testimony can be adduced.

Now, supposing that this question of priority involved any scientific honour, any pecuniary advantage, or were even likely to interest anyone in the remotest degree, I could prove that, as long ago as 1861, the sodium amalgamation process was not only matured in my mind, but fully described on paper, and handed by me to a well-known New York firm for publication;—I could show that it has been a common topic of discussion with my scientific friends any time within the last seven years;—that in 1864 the process was so much a matter of conversation, that I was urged to lose no time in securing my rights by a patent;—that about the same time successful experiments on a somewhat large scale were conducted at Manchester on rich Californian quartz;—that early in 1865 equally conclusive experiments were tried, in conjunction with Mr. Readwin, both at Manchester and in North Wales;—and I could especially remind you, Sir, that the first publication of the process in this or any other country (even ante-dating that of the Professor's and my own patents), was communicated personally by me to yourself, and by you published in the *Mining Journal* for June, 1865.‖

No doubt Professor Wurtz, did he care about it, could adduce similar evidence, which would prove beyond a doubt that he also had an acquaintance with the process before he patented it: but *cui bono?* There being neither honour nor profit, but only worry and loss of time, to be derived from this unsatisfactory exhumation of evidence, why will contemporary writers not allow Professor Wurtz and myself the credit of *each* having made an independent discovery? The history of invention abounds with analogous cases, and I am willing to believe that the discovery of the practical value of sodium in gold and silver amalgamation was a *bona fide* discovery on the Professor's part, as I hope he believes it to have been on mine. But for me to concede the discovery—that is, to admit that I have no claim to the credit of *originality*—is as much out of my power as it is far from my intention, involving, as it must, both the suppression of facts and the possession of an unreasonable amount of self-abnegation.

WILLIAM CROOKES, F.R.S.

Chemical News office, Wine Office-court, Fleet-street, Dec. 13.

IMPROVED ORE CRUSHERS.

SIR,—If there is one thing I detest more than another it is the practice of robbing honest inventors of their just rights. There are two examples of this in your valuable journal of last Saturday.—First. Mr. Jones pretends he has made an improved pulverising machine. Now, why does not Mr. Jones come out honestly, and say, "I have made a machine that, in many essential details, is Blake's patent, which has been advertised in the *Mining Journal* every week for the last four years." I am astonished to see the pages of your Journal taken up with such a mechanical deformity.

In the first place, he says the jaws are furnished with teeth, which teeth will prevent the stone ore ore from falling down in the jaws, as the slightest step or projection horizontally in the jaws will stop the stone from falling lower; and had Mr. Jones tried it he would have found it so. Another objection to his arrangement is, that he has the smallest amount of motion at the bottom, and the largest at top. This evil you will readily see if you drop in a large stone at the top, when the jaws are open; it wants a very slight motion to crack it; but as it gets lower down, and consists of a number of pieces, the jaws require greater motion to pack the particles together before they can be broken. Beside this, the thing is too complicated and tender—too much gingerbread—for a mine or stone quarry. Blake's machine has jaws 8 in. thick, and after eight years' practice, we find they require every pound of metal in them when used for crushing hard materials. Now, in case Mr. Jones has not seen the specification of Blake's patent, I will give a short extract, that he may see that his so-called improvement is one of the most outrageous infringements of which I have any knowledge.

First. "This apparatus consists essentially of a pair of vertical jaws, the one being fixed and the other moveable, or, if found desirable, both jaws may be moveable. The jaws have their acting faces corrugated downwards, one towards the other, so that whilst the space between them at the top, where the stones or other hard substances are introduced, is sufficiently large to receive them, the space between the jaws at the bottom is only sufficiently large to allow the fragments to pass through after they have been crushed or broken to the required size. A short but powerful vibration is imparted to one or both of the jaws by any convenient arrangement and combination of powerful levers, worked by a crank or eccentric on the main shaft."

Now, Sir, I have no doubt but you will see that the machine (if it be worthy of the name) described in your last is a very lame attempt to rob an honest patentee, who has spent years of valuable time in getting up a machine which shall prove a blessing to his fellow-men; and just when he has good reason to expect a little return for his time and labour, an unscrupulous usurper steps in and copies (but only in the outward appearance) the most essential parts of the real machine. Moreover, it is not only a copy of Blake's patent, but of another, invented in the present year, for in the *American Mining Index*, for January 22 last, there is described and illustrated exactly the same machine that Mr. Jones gives to the world as his new improved pulverising machine. The above died a natural death in about one month; if it had not, the owner of Blake's patent would have stamped it out in a short time, as they have already been obliged to do several.

The invention of Mr. James Frost, referred to in the letter of your correspondent, "H. C. F.," in last week's Journal, is such a palpable copy, that I need only allude to it by requesting any of your correspondents to inform me where such a machine is at work or may be seen.—*Soho Foundry, Leeds, Dec.* 12. H. R. MARSDEN.

[The placing of the fulcrum of the moveable jaw below instead of above the crushing chamber is undoubtedly a disadvantage, not only for the reason Mr. Marsden mentions, but also because in Blake's machine the fulcrum is beyond the reach of the fine crushed stuff, which alone could interfere with its action. Of course the introduction of a less efficient machine tends to prevent the adoption of that imitated; but it certainly appears that in the alleged infringement all the essential details (and it is upon the details that the success or failure of almost every machine depends) have been omitted. Thus Blake's well-known machine is, apart from any consideration of infringement, in every way superior to that patented by Mr. Jones.]

MINING IN IRELAND—No. IV.

SIR,—Amongst the variety of useful metallic minerals found in Ireland almost entirely useless may be reckoned the ores of zinc. This is scarcely to be wondered at, when we consider the state of the British market for these substances for many years previous to the date of 1860; then the prices obtainable for the best parcels of blende, or calamine, were so low as to barely pay the costs of dressing and carriage. No wonder, then, that Irish blende and ores of zinc should be almost, or indeed wholly, neglected. The case now, however, is, fortunately, different; the demand for zinc is so great, and is daily increasing. New works are being started in Wales and England for smelting black jack, and other sorts of ores which will yield spelter. In Ireland many varieties are found, some of which are extremely rich, and easily smelted; others are poor and refractory, but, no doubt, the time is at hand when science will render the whole of them practically useful and beneficial. Time was when the poor ores of Wicklow were deemed worthless, now so valuable for sulphuric acid manufacturing purposes. We have not only presumptive evidence of these zinc ores being utilised, but actual proof has been afforded in the careful and meritorious experiments of Capt. Roberts, of the General Mining Company for Ireland, by which he has demonstrated how the ores containing so small a percentage as not to be saleable to smelters may be treated on the mines to oxydize the zinc, and obviate the great expense of transit. No doubt further experience will result in future benefits.

Here then, again, is another important element of wealth, and an excellent auxiliary to lead and copper mining, blende being frequently found in this country on the backs of lodes, associated with lead and copper ores, as in Cornwall, Devon, Yorkshire, Wales, &c., especially in the clay-slate and limestone formations. Now that it is known this mineral will pay well, attention will be sedulously directed to it, and zinc ore will form no unimportant item of Irish export. Many mines in the western counties of England are kept at work by their produce of zinc, thus enabling the proprietors to meet a considerable portion of their monthly costs, selling it to second parties, who buy up sundry small parcels to constitute a cargo worth shipping; the prices now range from 2*l.* to 5*l.* per ton, according to quality and care exercised in dressing.

Some of the Irish blende is of extraordinarily rich quality, known to the practical miner as "resin jack;" another is a yellow sulphuret, having much the appearance of garnet rock; this is very volatile, and easily converted into spelter; besides which it makes an excellent mixture with calamine, and is of mutual service to both ores. Antimony, containing fully 75 per cent. of regulus, is obtainable at a very easy cost, and was formerly raised in considerable quantities; but, like most other mines, these were allowed to dwindle and become extinct, not for want of mineral, but chiefly owing to the distressing consequences of the terrible famine prevailing some years since. This ore is found in true lodes, not in pockets, as in Endellion and St. Kew, in Cornwall. From the lodes having a nearly north and south bearing, being parallel, and in the midst of great champion lead lodes, I am inclined to think these antimonial silver lodes are merely the backs of lead lodes; they have true gossans, of excellent character for lead, but strongly tinged and impregnated with the decomposed antimony ore, the action of the atmosphere acting powerfully on it.

Amongst the numerous minerals found in this country, of which no use has hitherto been made, is micaceous iron. The quality of this substance is, if anything, more brilliant in lustre than that produced at Hennock, in Devonshire. It is easily wrought, the carriage to port or Dublin by rail is of easy charge, and no doubt if employed in that city for the manufacture of the "servant's friend," and lubricating grease, it would be found a valuable article of commerce; as yet I am not aware of its application to such purposes here. The freight for the raw material to Liverpool or Glasgow is extremely moderate. Surely this is worthy of attention; I feel quite persuaded it could be sold at a far less price than the Devonshire article, and still leave a profit.

Bog iron is found, in prodigious quantities and of superior quality, in connection with many peat bogs, but hitherto all attempts to produce iron to meet the market in price have failed. I hear the loss is more to be attributed to bad management than to bad material; if this be true, as all in probability it is, there is room for hope yet; these evils will cure themselves in time. Hematite ores are found in various localities, but have not been so extensively worked as to afford even an ideal value of the deposits. This to be lamented for many reasons, especially as the raising of such ore is an employment admirably suited to the habits of the peasantry, as, in most instances, it does not require practical mining experience.

As I propose at a future time to go more into the subject of iron mining in Ireland, I shall be brief in its notice here, and shall now refer to another branch of industry well calculated for the Irish labourer—slates.

Ireland abounds with slates of very good sorts. Mica slates of any dimensions, suitable for flooring and pavement, may be obtained at a trivial cost in the counties of Galway, Mayo, and Cork, in close proximity to ports; yet these are nearly or wholly neglected. Roofing slates are found in many localities, and are wrought to some extent, but I fear prejudice works for evil in these as all other cases. I am glad, however, to learn that at the Roaring Water they have opened a good quarry, and will commence slate-making very shortly; also, that on the Earl of Luca's estate, in the Killiries, slate quarries are to be opened out in the ensuing year. These slates are of excellent metal, greatly resembling the best Bangor. The quarries will be close to a port of a sufficient capacity to accommodate vessels of 200 tons burden, at all times secure from storms.

The clays of Ireland also have not had that attention devoted to

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* "I shall but refer briefly to the conflicting claim to priority of discovery which was entered by Mr. Wm. Crookes, one of the most learned, industrious, and successful of the English scientists. The graceful concession of this point, which Mr. Crookes is considered of late, both by scientists and jurists, to have made, by his own silence, and by publications in the journals ostensibly authorised by him, it is thought will not prove any appreciable detraction from the laurels so well and worthily won by him in the field of chemical discovery." From a paper "On the Utilisation of Sodium in Gold and Silver Amalgamation," read before the American Association for the Advancement of Science, by Prof. Henry Wurtz, of New York City. See also "Silliman's Journal," vol. xii., p. 216.

† ". . . More especially as in England we are accustomed to attribute its origin to one who has already had the annoyance of having his right to another chemical discovery seriously disputed. . . . Dr. Wurtz has fair grounds for demanding at least some explanation from Mr. Crookes to account for the apparent plagiarism."—*Mining Journal*, April 13, 1866.

‡ ". . . Prof. Henry Wurtz, of New York, the gentleman to whom the honour of having discovered the sodium process is now generally conceded."—*Mining Journal*, Nov. 24, 1866. "The honour of having discovered the sodium process is generally conceded to Prof. Henry Wurtz, of New York."—"Mechanics' Magazine, Nov. 30, 1866.

§ "Silliman's Journal," September, 1863.

‖ The article referred to by Mr. Crookes is that by Mr. Thomas Belt, published in the *Mining Journal* of June 24, 1865.

them which their merits or variety deserve. This is, by some persons, attributed to the scarcity of coal. However, this I think is not the sole cause of the evil; I believe apathy and prejudice have much to do with this neglect. In many clay-producing counties coal is as scarce as in Ireland. The vast business now carried on in Cornwall by clay production was as unknown 70 or 80 years ago there as it is now here. The granites of Ireland abound in felspar, and I am quite persuaded search in the mountains and valleys would be rewarded by the discoveries of both china-clay and china-stone. Indeed, I have seen specimens of each in collections said to be of Irish origin, but, unfortunately, the localities whence obtained were not mentioned, and the person in charge could give no information. This oversight, I am sorry to say, is not confined to Irish collections. That is to be greatly regretted, as this is the very gist of the knowledge required. Plastic clay, as well as brick earth, abounds, yet bricks are imported. Clay, adapted to the manufacture of sanitary tubes, tiles, and fire-brick are procurable, but the adaptation of these may be, and possibly is, prevented by the high price of coal.

Having now extended my notice to the length usually permissible, I close my paper. I think I have already shown that Ireland contains within itself elements for a vast industrial employment in rendering inert matter nationally important. Yet I have other matters connected with the subject, to which I shall hereafter refer—marbles, lime, and building-stone. GEORGE HENWOOD.

MINING AS AN INVESTMENT.

SIR,—In last week's Journal you inserted a letter from me, headed "Mining as an Investment." The tenor of that letter was, that it is not in actual investment in mining property that the money is lost which makes so many timid of embarking in mining enterprise, but that it is thrown away in share speculations, to the injury of mining, or at least the reputation of mining as a business. I shall now, with your courteous permission, present to your readers some additional considerations connected with this subject, which I humbly venture to declare ought to have the grave attention not only of all who invest or are engaged in mining, but also of such of the general public as take an intelligent interest in our commercial prosperity, and the employment of the people.

The fluctuations in the price of shares in the mining market, notwithstanding the danger they create for those who meddle with them, have an attraction in their very nature for persons of a speculative and venturesome turn of mind. It is an excitement similar to that of a bet, and awakens hopes and feelings unknown to the ordinary speculation of legitimate business ventures. Some men are willingly drawn into the vortex of excitement thus ready to receive them, and are, of course, in many instances lost there. This excitement and hazard have a tendency not only to ruin the circumstances, but also to destroy the minds, of those they pervert. It is surprising that intelligent persons do not see the path of risk that they are about to tread, for it is plain enough, at all events to anyone of common sense who is warned once of its character. Men on the Stock Exchange and elsewhere agree to give certain shares, in which they have an interest, a favourable quotation, until their nominal value is deceptively run up, when these very persons sell their shares, realise large sums at the public expense, and send down the nominal value of the shares themselves.

The operations of "bulling" and "bearing" can assume no form which is honest in itself, and is not injurious to the property so treated. It is a remarkable fact that, notwithstanding the vast cross dealings in some shares, a comparison of the lists of shareholders with the lists of original shareholders, shows very little difference in the names, or amount of interest in the property identified with them. It is obvious, therefore, that the vicissitudes in the quoted prices have in such cases resulted sheerly from the illegitimate proceedings connected with what is technically called "bulling" and "bearing." All the moneys that have gone into the hands of the dealers have gone to the advantage of the professional speculators and their friends, and not to the promotion of the undertaking the shares of which have been professedly exchanged. Take the quotations daily published in the newspapers; only the names of a few mines appear there, such as it suits the parties to have quoted, who band together to give them a nominal value, while hundreds of excellent mining properties, including the most prosperous in the United Kingdom, are never so much as referred to in a City Article, or have the dubious honour of standing under a quotation in a Share List. *Ex uno disce omnes.* I know an instance of a Cornish copper mine, which is a great favourite with the brokers, and which has been "bulled" and "beared" to such purpose, that within a few months thousands of shares changed hands among the dealers, when actually only 400 had been transferred. The mine is divided into 5636 shares, and yet, in less than 18 months, nearly 40,000 shares were ostensibly bought and sold.

Let it be once more impressed upon your readers, especially those whose interests are at stake (as is the case with most of those who read the Journal), that the business of mining must be conducted like any other business undertaking. If a company build a ship, it is obvious that, during the process, all traffic in the shares would be a matter of gambling as much, or nearly so, as the throwing of dice. If a company erect a vast block of warehouses in London, "bulling" and "bearing" of the shares could add no value at all, nor diminish the value in the least. When the ship receives her freight, and unfolds her flag to the breeze, then she is a property to be bought or sold. When the warehouses or offices are ready for occupation they are a property available for legitimate dealings. So is it with a mine. There must be a subscribed capital, a prospective take of land, a proper judgment formed of the geological, and consequent mineralogical, characteristics of the place; this must be worked until the capital employed has accomplished its purpose, and the development of the lodes compensates the owners: then it is a property, and not until then, and no flying up or ponderous sinking of the quotations in Share Lists and in City Articles can make it anything until thus developed. But, as time is a *sine qua non* in work, the speculators attempt to forestall time, and make a profit by deceptive traffic in the nominal shares of what may become, but is not yet, a property. If capitalists will subscribe their money for the selection of good ground, and work its deposits during the years—it may be the long years—that are required, they will find no more honourable, useful, for profitable mode of employing it. THOMAS SPARGO.

Gresham House, London.

THE CHINA-CLAY TRADE.

SIR,—If the object of your correspondent, "Argus," were really to represent fairly and honestly the facts relating to this trade, or of those parts of the district to which he refers, or if his statements and figures approximated, in even a slight degree, to the truth, a few discrepancies might be allowed to pass unnoticed; but as his Letter No. I., which contained sufficient misstatements to astound anyone conversant with the details, is "out-Argussed" by Letter No. II., it is right that a "trap to entrap the unwary" should be exposed. I do not condescend to discuss his figures, either as to the production of those parts of the districts, or of the particular work he specifies, or their money value, profits, &c., except to say that they are quite as fabulous as his other statements, but will affirm that the total sales or shipments of clay, taking an average of the past three, five, or seven years, have not exceeded 100,000 tons per annum (*nor* of china-stone 25,000 tons per annum) *from the whole county.* Let your readers compare these figures with those of "Argus" in his Letters Nos. I. and II., or even with the latter only.

The object of those letters is evident, and the concoctor of them deservedly appreciated by those who know him; but it is to be hoped that your readers, and those of other journals who reprint his effusions, will not suffer themselves to be entrapped in the "gross" for want of careful enquiry. And as every tale should have a moral, I give one which the disinterested gentleman referred to cannot possibly disapprove of—"Any information as to china-clay setts, &c., can be obtained by applying to 'Argus,' Post-office, Roche, Cornwall." CAVEAT.

Dec. 10.

THE PRINCESS OF WALES SLATE COMPANY.

SIR,—Mr. Silver probably knows more about ships than slate quarries, or he would not complain that a quarry which has only been at work two years, and has had spent upon it much less than 2000*l.*, has only made 217*l.* worth of slates. The wonder is that any were made, and especially of such splendid quality, of which Mr. Silver takes no notice. Neither does he say anything about the work done in developing the quarry. No one expects to get freight, cargo, or profit out of a ship before she is launched. A basket of chips is about all the return that can be expected. Our ship is on the stocks, and a good ship, too, that will never have any rotten timbers to replace. Those who are acquainted with slate quarries think we have done well, and laid the foundation of a good and lasting quarry, and only those ignorant of the subject can be misled by such statements as Mr. Silver's.

Mr. Silver says he offered himself for nothing as a director and auditor. Well, it is quite clear he knows nothing of quarries or quarrying, and, therefore, did not overrate himself, and was not accepted. But he is in error when he says the directors voted themselves in; they did not vote on the question, nor was there any occasion for them to do so, there being a large majority of votes in their favour, exclusive of any the directors might have.

Mr. Silver invited a trial of strength, and, being beaten, evidently feels sore.

Dec. 13. THE CHAIRMAN OF THE COMPANY.

GREAT BONNIE—SOUTH CORNWALL.

SIR,—As there appears to be some doubt about the report of Capt. Charles Thomas on the Great Bonnie, now South Cornwall, I beg to say that Capt. Charles Thomas, of Dolcoath, inspected that property with me for the promoters of the then Wheal Eliza, which is the same sett as the South Cornwall, and when the Wheal Eliza Company failed Capt. Charles Thomas's report was handed over to the Great Bonnie promoters, and I have no doubt from them to the South Cornwall people. What abridgement or alterations might have been made in Capt. C. Thomas's report is quite unknown to me; all I can say, his report was a very favourable one as to the value of the property, and there is not the least doubt, if this property were fully developed, it would be a paying concern at the present price of tin. Perhaps the insertion of this in the Journal will end all dispute as to that report.—*St. Austell, Dec. 12.* H. B. GROSE.

ALGERIA—No. VI.

SIR,—In order to judge of the future of Algeria, it may be as well to look back and draw a parallel between our own country and that in past times: 1900 years ago the Romans had civilised Numidia; its mountains were studded with cities, and covered with the orange, the lemon, the cork-oak, and the olive. It must have occasioned considerable disappointment to them on coming to Britain, which had been described to them as a country rich in mines and full of mineral treasures, to find nothing but chalk cliffs before them, and, instead of the Barbarian, a people who had the art of manufacturing iron chariots, a business requiring skilful smith-work, and who could manage these chariots with scythes in war after a very clever fashion. A Roman, in writing the news of the victory first obtained back to his friend in Gaul, said that notwithstanding so much had been said about the value of the British mines, it was quite clear that no such mines existed; no doubt he was judging from the chalk cliffs as to the metalliferous character of the country, but they evidently considered mines as one of the great objects of their expedition; and a long time afterwards, when they had discovered Cornwall and Devon, with their rugged outburst of bare granite rocks, and particularly Cornwall, with its ranges of tin ground and its mines, to them then ancient, for they had been worked 400 or 500 years before by the Tyrians, it must have formed but a poor contrast to the fertile region of Africa, with such cities as Carthage, Djidjile, Rusicada, and Constantine. It is, however, wrong to judge entirely from appearances. These apparently barren Cornish shores in the 20 years now just past, for an investment of a capital of 1,867,000*l.*, according to the statistics of the Journal, have realised a profit of 6,637,000*l.*, and found the labour and living for one of the most industrious and worthy populations that ever existed on the face of the globe. If the Romans had abided by their first decision, and gone away, they might forever have drawn a false conclusion as to the value of the country. I suggest this because Algeria has cost France an immense amount of blood and treasure, but possibly there is a future that will amply repay her all her losses. On her shores there are immense marble quarries, also iron mines, and copper, lead, and mercury are found to some extent. Who shall say what these may form when developed? The first belt of 10 miles along the coast is covered by the cork-oak, having a rind of cork from 1 to 3 inches in thickness. M. E. Salices says, in his pamphlet on the products of Algeria, that the nett profit of a cork forest of 4000 hectares would be 164,000 frs. per annum, or that one forest would give about 7000*l.* profit a year. He says, not to cite anything but the province of Constantine, from Tunis to Bougie, these forests present a surface of 200,000 hectares: that there remain 95,000 hectares in the circle of Collo, close to Philipville, to be completely cultivated, while 70,000 are susceptible immediately of a profitable issue. He also quotes a fact from M. Niepce—that on the sea-coast between Collo and Djidjile, in fair weather, the products of the country could be shipped on a very extensive scale from the littoral, where the shipment is easy, and all the creeks present remains of the ruins of Roman occupation.

I lived for a fortnight in one of these cork forests, under the hospitality of Count Montalembert, called Eloued Sudain, the Brook of the Sultan, and nothing could be more enjoyable than such a life. The greatest inconvenience was the badness for the horses of the Arab paths; but I think I never saw a more splendid sea view than from the crest of the hills. About three miles behind the house there rose to an elevation of 1500 ft. above the sea, commanding a view of a large extent of the Mediterranean, the shores and islands of Stora, near Philipville, the great marble quarries of Filfila, and the Lake of Fitzara, close to the extensive iron mine of M. Talabot. It is said of the lake, and I see no reason to doubt the fact, that it would make a splendid speculation to unwater and cultivate it. It is said to be very shallow, capable of being easily drained, with reference to the levels, which I examined myself, and it covers some miles of surface. The marble quarries below these heights, but still a great height—about 50 fms.—above the level of the sea, were extensively explored by the Romans, who raised great quantities of statuary marble from them. The remains of these sculptures are found in all the old cities of the country in excellent preservation. The produce of the quarries consists of stone of a variety of colour, and the estimate of the common yield, to say nothing of the finest, is that the rock would leave a profit on the working of 190 frs. the cubic metre, about 6*s.* per cubic foot, or nearly 4*l.* per ton. The quarries are now neglected, and it would be necessary, in order to re-work them to advantage, to erect an inclined plane for a short distance to deliver the marble into the little Bay of L'oued Rerra. From facts of this description it will be easily gathered that Algeria is a country teeming with the elements of successful enterprise. The Kabyles, the most energetic labourers of the country, work hard, willingly, and steadily. They seemed to me while I was in the forest to be a cheerful, sympathising race of people. I have had some experience of workmen in different parts of the world, and I should not be afraid to undertake any sort of enterprise with such a race. I found the greatest civility, courtesy, and hospitality from the gentlemen magistrates who had settled in the country. Whether French or Italian, all deserve praise for their politeness and other more solid attentions. COPPER MINER.

MINING IN AUSTRALASIA—MONTHLY SUMMARY.

The accounts from the mining districts of South Australia, which have been received by the present mail, are most encouraging, and there was evidently every determination on the respective properties to make up for the unavoidable delay caused by the recent drought. The Burra had commenced the development of the lower levels, to determine more fully the value of the mine, and Captain Roach, the principal agent, reports the discoveries made as most encouraging. The Moonta, a mine of only three years standing, had declared the seventeenth dividend of 5*l.* per share, on 5*l.* per share paid, equivalent to 85*l.* per share of 5*l.*, and this in the face, moreover, of the low price of copper. The Blinman also are pushing on their underground works, and completing their smelting establishment, which has already proved most efficient in the conversion of the ores into metal. The Worthing, likewise, are going on well, and sinking to deeper levels, where they have discovered ores of a richer character than usual. A new claim, taken out by Mr. Bonney for the Great Northern Company, and known as the Yanywirra, is represented as likely to prove of great value. This sett is in close proximity to the Blinman, which has made such rapid strides in producing rich ores. The bismuth and copper mines, situated about twenty miles north of the Yudanamutana Mine, have been partially opened, and bismuth ores sent down to Adelaide, where they have been reduced into metal. This metal is, no doubt, most valuable, and commands high prices, but its consumption is very limited. A lode of this ore has been reported to have been discovered on one of the sections of the Yudanamutana property. In connection with the western districts of South Australia, it is important to mention that a question had been introduced by the Government Council, and passed unanimously, for the construction of a railway from Port Augusta to the mineral districts of the North. Coal is reported to have been discovered in the Port Lincoln district.

AUSTRALIAN MINES.

YUDANAMUTANA COPPER.—Oct. 29: I shipped this month 7 tons 7 cwts. of copper, 10 tons 8 cwts. of ore, and have now at Port Augusta and on the road 13 tons of copper, which will be shipped in the course of a few days. The horse teams continue steady and regular in carting produce and stores between Port Augusta and Blinman Mine, for which I am now paying at the rate of 5*l.* per ton. Fuel is coming in very fast: 5000 tons of wood have already been delivered at the smelting works. I hope to be able to advise of increased shipments of metal by every succeeding mail. A resolution has been carried unanimously in the Legislative Council, on the motion of the Hon. J. H. Barrows, "That provision be made forthwith for forming a railway northward from Port Augusta for 200 miles." Capt. Anthony reports, under date of Oct. 20—"Blinman Mine: I lit a fire in No. 2 furnace on the 23d ult., but finding the two furnaces did not work well in the same stack, I continued smelting with No. 2 only, and set to work finishing No. 3, which I shall light fire in on the 24th inst.; I shall then have the second and third furnaces at work, each having its own chimney. During the last four weeks I have smelted the following ores—36 tons of burrows, 49 tons of smalls, and 20 tons of third and fourth class ore; the result is 16 tons of copper. The supply of firewood continues steady and uniform."

WORTHING.—The lode has been cut in the 73 fm. level 4 ft. wide, and would yield from 4 to 5 tons of good ore to the fathom. The lode here is much better and more solid than in the levels above, showing an improvement as the mine gets deeper; lode the same distance from shaft as in the level above. At surface an alteration in the system of dressing has resulted in increasing the percentage of the ores from 2 to 3 per cent. Quantity raised during the month 256 tons; quantity of regulus made, 60 tons; regulus delivered to Copper Company, 38 tons. On hand, 106 tons of ore and 32 tons regulus. Cost-sheets, 1835*l.* 2*s.* 10*d.* Wood received, 1099 tons.

YORKE PENINSULA.—Oct. 26: The operations were resumed on Oct. 24. Captain Semmens expected to have the mine free of water by Oct. 29. He states—"I have not altered my view since I last reported. As I have stated in my former reports, there is every indication that we shall have a good mine." He expected that about two months' driving would carry the level underneath the point in the 25, where the last discovery of ore was made, and left going down towards the 35.

ENGLISH AND AUSTRALIAN COPPER.—On Oct. 29 the quantity of coal at Kooringa and Port Adelaide was 5203¼ tons. There were five furnaces and one refinery at work at Port Adelaide. Since date of last advices shipments of 137½ tons of copper had been made.

PORT PHILLIP AND COLONIAL GOLD (Mr. Bland, Clunes, Oct. 26).—The quantity of quartz crushed during September, six weeks, was 6382 tons. The yield of gold was 3327 ozs. 16 dwts. 12 grs., or an average of 10 dwts. 10 grs. per ton. The receipts for the same period were 13,333*l.* 17*s.* 2*d.*; payments, 6806*l.* 13*s.* 6*d.*; profit, 6527*l.* 3*s.* 8*d.*; Port Phillip Company's proportion, 4242*l.* 11*s.* The sum divided between the two companies was 6000*l.*—3900*l.* to this company, and 2100*l.* to the Clunes Company, leaving the balance of 527*l.* 3*s.* 8*d.* to be carried forward to the October account. Remittance, 3900*l.*; return for October, two weeks. Quartz crushed, 2140 tons; yield of gold, 693 ozs. 17 dwts.; or an average of 6 dwts. 11 grs. per ton.

SCOTTISH AUSTRALIAN.—Oct. 23: The sales of coal from Lambton Colliery during the month of September last amounted to 15,340 tons. Mr. Morehead, the general superintendent of the company, advises the board of the acquisition from the Crown of 880 acres of additional coal-bearing land, adjoining the Lambton Colliery.

CADIANGULLONG.—Oct. 19: Copper Mines: During the month there were sampled from the mine 78½ tons of ore, of a quality ranging from 6⅜ to 33½, averaging 14¼ per cent. for copper, and yielding by assay 11¼ tons of fine copper.—Smelting Works: There has been sold at Sydney 33¼ tons of fine copper; there are nearly 14 tons in a state of forwardness, which would be dispatched from the works to Sydney at the end of the month. Ore on hand, 35 tons; wood, 361 tons.

OTEA COPPER.—Captain Higgins, Sept. 28: There is no material alteration in the winze sinking under the shallow level: the lode maintains its value. In consequence of the lode being so large at this place (over 40 ft. wide) I cannot say as yet whether we are sinking on the richest part of the lode or not. I expect to communicate the winze with high backs in the course of next month—present depth from shallow level, 12 fms. The last 7 fms. have been through ore ground of fair average yield. Having fully explained the object for sinking this winze, I beg to remark, respecting the amount of ore ground standing above adit, that our previous estimates will be found correct. This is the only bargain in operation. The stopes being suspended, the men have been employed in breaking rock ready for the crusher—computed 150 tons broken on the floors. In a few days I expect to resume the stopes again. The accident occurring in breaking the separator pinion-wheel is likely to impede our dressing operations fully a fortnight. We shall lose no time in setting the machinery in working order again. The new wheels arrived this evening. I attribute the breakage to have been caused by the pair of heavy fly-wheels fixed to the separator, which I consider quite unnecessary, and not required. During my experience with separators—five years—we never used any fly-wheel. Any sudden motion to stop the machinery after its full speed has been attained, with those fly-wheels revolving, will be liable to breakage of a similar kind, consequently I shall recommend their removal. Messrs. Harvey, no doubt, considered they would assist the engine. In consequence of the long delay in getting the machinery to work some uneasiness to the directors has, no doubt, been caused. I propose that some practical person be called in to inspect and report fully on the works carried out. As we have outridden the time and estimate the work was to be completed in, it will be only fair to have a disinterested opinion to communicate forthwith. The works were not sufficiently advanced on Mr. Wright's leaving to give a correct estimate. It must be considered that this is an extensive plant of dressing machinery, erected on a small ledge of rocks, I may call it. I expect to be in full operation in one week from this date, when the shareholders shall have the full benefit of my exertions in returning as much ore as possible for shipment. In accordance with the suggestion of Capt. Higgins, Mr. George Fraser, of the Phœnix Foundry, Auckland, was employed to inspect the machinery, and he concludes a long and detailed report made to the company's agent as follows:—Every part of the machinery at work and in course of erection reflects skilful judgment in its arrangement and erection, and all that is now wanted to make the Otea Copper Mine a great success is energetic and skilful management, which I feel sure is on the ground. I trust you, and the company whom you represent, will reap that rich harvest which you deserve.

FORTUNE COPPER (W.A.).—Capt. Pemberthy, Sept. 29: In No. 2 stope, in back of the 30, north-east, working by two men, the lode is 3 ft. wide, producing 2 tons of lead ore per fm. In the 30 fm. level, north-east end, driving by two men, the lode is 2 ft. wide, producing 1½ ton of lead ore per fm. In No. 1 stope, in back of the 30, south-west, the lode is 2 ft. wide, producing 3½ tons of lead ore per fm. In No. 2 stope, in back of the 30, south-west, the lode is 3 ft. wide, producing 2½ tons of lead ore per fm. In No. 1 stope, in the back of the 20, south-west, the lode is 3 ft. wide, producing 2½ tons of lead ore per fm. In No. 2 stope, in the back of the 20, south-west, the lode is 2½ ft. wide, producing 3 tons of lead ore per fm. In No. 1 stope, in the back of the 12, south-west, the lode is 3 ft. wide, producing 2½ tons of lead ore per fm. The quantity raised and dressed this month is 65 tons of lead ore, of about 75 per cent.; 10 tons of copper ore of about 17 to 18 per cent. The quantities of ore on hand at date were—At the mine, 58½ tons of lead ore, 10 tons of copper ore; at Champion Bay, 428½ tons of lead ore, 99 tons of copper ore. Freight had been engaged for 150 tons of lead ore per *Palestine*, and arrangements were being made for further shipments of about 320 tons by vessels to follow the *Palestine*.

Anthracite coal has been found at Port Lincoln, and a new process of separating pure bismuth from copper ore had been discovered, which was thought to be of extreme value.

The *Sydney Herald* says the news from the gold fields is very good this month. At Tambaroora a large nugget weighing 87 ozs. was found. The quartz crushings at that place are yielding first-rate returns. In one case 400 ozs. of the precious metal were obtained from 8 tons of quartz from the Independent Reef. A very rich quartz reef has been discovered by a party of prospectors in the Weddin Mountains.

The *Melbourne Argus* says the yield of gold has been more than maintained, the exports of Victorian gold having exceeded those in the corresponding period of 1865 by more than 70,000 ozs., while the increase in the export of New Zealand gold from Melbourne has been still larger.

ST. JOHN DEL REY MINING COMPANY.

The half-yearly general meeting of shareholders was held at the London Tavern, on Wednesday,—Mr. J. D. POWLES in the chair.

Mr. J. HOCKIN (the managing director) read the notice convening the meeting, and the minutes of the last were confirmed.

The report of the directors appeared in last week's Journal.

The accounts showed a nett profit on the working of the mines for the past half-year of 50,566*l.* 9*s.* 8*d.* Adding thereto the amount received, and to be received, for interest on moneys unemployed, 1570*l.*, and the balance of undivided profits carried forward last year, 743*l.* 11*s.* 4*d.*, made a total of 52,880*l.* 1*s.*; deducting the London expenses, 1193*l.* 16*s.* 3*d.*, there remains available for dividend on the half-year's operations 51,686*l.* 4*s.* 9*d.*

The CHAIRMAN said it was a great satisfaction to the directors to have the pleasure of meeting the shareholders upon the present occasion, as they had nothing to communicate but that which was agreeable and encouraging. The foundation upon which the directors were authorised to propose the dividend was, of course, the realised profits, which (as had been seen by the report) amounted during the past half-year to 50,566*l.* Out of the amount available for division the directors proposed to recommend a dividend of 4*l.* per share. Every part of the company's proceedings during the past six months had gone on successfully, but there was one point referred in the report to which he could not help calling attention, and that was to the continually improved yield of gold per ton of ore, and another point of very great importance was the further reduction in the loss incurred in extracting the precious metal from the ore. The time was when the loss was 50 per cent., but for some time past it had been reduced to about 15 per cent. The percentage, however, was not always so true a way of showing the results as the loss per ton, because the ore might be richer or poorer. The loss was at present about 1½ ottavas per ton. This was of great importance, inasmuch as no more cost was incurred in raising the ore. It would, probably, be within the recollection of most present that some time since a system was established that once in every year a committee, consisting of five of the most experienced persons connected with the heads of departments, should examine every part of the mine, and if any weak portion were discovered, to at once adopt timely measures, and so remove whatever danger there might be in prospect. Great advantage had been experienced by those annual labours, which would be resumed, although so far as could be seen, everything was in a sound and satisfactory state. (Hear hear.) He did not know he need trouble the meeting with any further remarks; and, therefore, would move the resolution that a dividend of 4*l.* per share free of income tax) should be declared.

Mr. JAGO wished to know whether the board had any information to communicate with regard to the Newcastle property?—Mr. HOCKIN said the last quarter's rent of the property, notwithstanding the bad times through which they were now passing, was one of the best that had been received. From what he saw of the property upon his last recent visit, he considered there was much to encourage them to hope that it was steadily improving in value. Some of the sites which were vacant five years since, when he last visited the property, were now occupied by large warehouses, which justified the belief that the whole of the water-side of the Tyne would eventually become very valuable.

Mr. JAGO supposed the warehouses were not upon the company's property.

Mr. HOCKIN said that the warehouses were built upon property immediately adjoining.——Mr. COPELAND wished to know if the company's property was simply land?—Mr. HOCKIN said there were warehouses as well as simply land. The former the company worked themselves. The back land was not so valuable. It was held by a decree of the Court of Chancery, and the nett rent of the last year was equal to about 3 per cent. It had been gradually improving during the last three years.

Mr. COPELAND asked if the property became very valuable whether the com-

pany would derive the benefit?—Mr. HOCKIN: Certainly. There could be no claims afterwards. As he had already said, the property was held by a decree of the Court of Chancery, the best title that could be obtained.

The CHAIRMAN, in reply to a question, stated that everything with regard to the new property was of an encouraging character, and the stamping mills had been commenced to reduce the ores. Upon assay, the ore produced 9·6 oits.

Mr. S. HERAPATH said the two properties could not be compared, inasmuch as 4 oltavas per ton from ore upon the new property would, probably, produce more profit than the Morro Velho Mine.

The resolution adopting the dividend was put, and carried unanimously.

The meeting having been made special, the following resolution was submitted—"That, in addition to the remuneration provided for by the 57th Article of the Company's Regulations, in every year in which a dividend amounting to 15 per cent. per annum, or upwards, on the capital paid on each share shall be declared, such a sum shall be allowed to the directors as shall be equal to 1 per cent. on the gross amount appropriated for such dividend."

The question was referred to a committee of shareholders, and the meeting was adjourned to Jan. 12.

A vote of thanks to the Chairman and directors terminated the proceedings.

GREAT WHEAL VOR UNITED MINING COMPANY.

The quarterly general meeting of shareholders will be held on Wednesday. The profit and loss account for three months ending September shows—

Black tin sold (August)		£3546	0	10	
Ditto	(September)	3668	2	6	
Ditto	(October)	3503	18	10	
Sundries		38	5	9	£10,756 7 11
Mine cost (July, August, and September)		£4977	8	3	
Merchants' bills (less discount)		1892	7	3	
Dues		580	18	2	
Sundry payments (including London expenses)		234	15	7	7,685 9 3
Leaving balance (profit)					£3,070 18 8

The audited cash account (made up to Oct. 31) showed a credit balance (including cash, bills receivable, and petty cash) of 3488*l.* 18s. 6d. The auditor (Mr. William Moates) certifies the balance-sheet to be correct, and that the usual vouchers for the payments included therein had been produced. The debts on Oct. 31 were *nil*. A supplemental statement will be exhibited at the general meeting, showing the financial position of the company's affairs up to that day.

During the three months there were 103 fms. 3 ft. 11 in. of ground sunk and driven.

WELSH GOLD MINING COMPANY.

The general meeting of shareholders will be held on Tuesday.

The report of the directors states that they regret the results of the trials agreed to at the last general meeting disappoint their expectations, notwithstanding the period occupied with the explorations suggested by Mr. Dean have been prolonged far beyond the time then named. The directors, however, were most anxious that every facility should be afforded and effort encouraged to fairly test the commercial value of the property before coming to any decision as to the future. Although the total quantity of gold taken by the company from the mines has reached 667 ozs. 8 dwts. 17 grs., yet, after due consideration of the statement of the engineer, the directors think they have only one course before them—to recommend the adoption of the special resolution for a voluntary winding-up of the company, without further infringement upon the assets or the mines, estimated by Mr. Dean at 3076*l.*

The report of the engineer stated that since the last general meeting the operations at the company's mines have been chiefly of an exploratory and experimental character: the force of men employed and the expenditure have been kept within the lowest limits consistent with the objects in view. The further trials upon the western part of the main lode in the Berthllwyd sett have not shown any improvement in its value. The lode is large, and yields gold throughout its mass, but the average produce of the stuff broken during the trials did not exceed 1 dwt. of gold per ton. The lode is passing through a very thick band of unkindly ground, and there is no sufficient prospect of an improvement to warrant the further prosecution of trials there. At the Cefn Coch Mine the explorations have been chiefly confined to the north and south lode, where it intersects several east and west lodes. From the ground between the 17 fm. level (the deepest) and the surface 273½ tons of mineral have been broken out and stamped since November, 1865, and yielded 57 ozs. 11 dwts. 1 gr. of gold (or 4 dwts. 5 grs. per ton); and 6 tons yielded 14 ozs. 9 dwts. 11 grs. (or 2 ozs. 8 dwts. 6 grs. gold per ton). This lode has been explored over a length of 25 fms., by 17 fms. in height, and has yielded to the Welsh Gold Company 367 ozs. Beyond the before-mentioned length the lode dwindles in size, and it is doubtful if, away from the intersections with the east and west lodes, it will be found to maintain its value. To test this lode at greater depth either pumping machinery must be erected, or a long and expensive adit driven through dead ground. At Dean's workings, higher up the mountain, the lead lode has been further tried, and the ore is found to cut out in the bottom: 40 tons of the mineral tested yielded silver-lead and gold to the value of 15s. per ton of mineral as broken, which would have paid very well had the mineral continued to hold in depth and length. In all the trials made the lode changes its character at a short depth from the surface, and becomes unpromising, which may be attributed to an unfavourable change in the enclosing rock. He regrets he cannot report more favourably of the trials made during the past year. He estimates the sale value of the plant and stock at 367*l.*

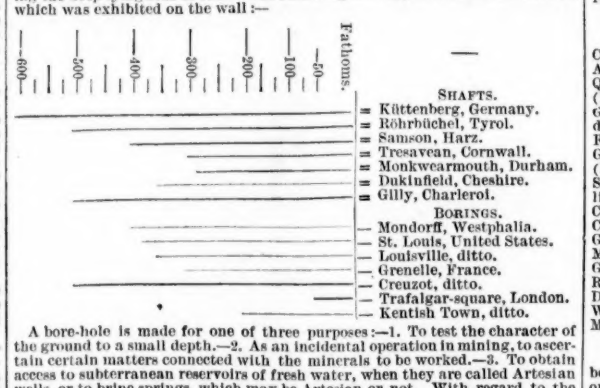
Royal School of Mines, Jermyn-street.

MR. WARINGTON SMYTH'S LECTURES ON MINING.

NOV. 30.—When the lode is discovered by any of the means we have passed under review, there remain several other things to be considered. It is an extremely rare thing to meet with deposits of ore at the surface, as at the points where ages ago it may have cropped out the chemical action which has gone on has, in most cases, completely changed it. The indications, then, that we meet with are merely symptoms of a repositary of ore of some sort; and it becomes important to make out whether it is really a lode, or whether it is an irregular mass, or of a more stratified character, because, practically, the laying out of the mining plan depends on the nature of the depositary. Thus, taking the case of such a mine as Fawnog, in Flintshire (map of which exhibited), where the outcrop was discovered by the occurrence of certain large shode stones of rich ore, and where a number of shafts have been sunk, with much success; but the nature of the ground which enclosed the ore rendered it necessary to approach with great caution, and operations had to be commenced at several places near the outcrop; and a narrow band of workable material, lying in the same line as the veins of the district, but which had really nothing to do with a lode, for some time misled the miners. It is always desirable to come to a conclusion at once, if possible, as to the nature of the work to be commenced. Thus, if there be an appearance on a hill side of outcrop, which has a mineral character, it may be the best course to follow the plan very commonly adopted by the old miners, and drive an adit, so as to intercept the supposed lode at a lower level. In that case, if it should not be a true lode we may very possibly find that it has dipped away in another direction, and we are prevented from beginning operations in a wrong place. Another reason for caution is the false appearances sometimes presented by the effects of slides or faults, or throws. He knew a district in Ireland where there was the apparent occurrence of two seams of coal within a certain area. It cropped out at two places, and that was the conclusion arrived at; but when the ground came to be more closely examined it turned out that it was but one seam, which had suffered from a small slip-fault near the surface. Mr. Taylor cites a case in the Pennsylvanian coal field, at a place called Swatura, of a certain seam which is faulted and breaks to the surface no less than eight times. Another reason for caution might occur from the fact that the line of outcrop is not always of the same character in the same district. Suppose, however, we have made out our repositary distinctly, the next consideration is what may we expect as to its continuation in length and depth, and what the probabilities are of success in working it. He would not detain them by any remarks upon the stratified deposits, because they were generally so uniform that if they were good at one point they were likely to be good over a considerable tract of ground. But with regard to mineral veins, we must judge of the probable depth by the indications contained in the gossan, the spars which may occur, and, generally, the stoney material, mingled with other substances within the vein. These are not only guides, but they may sometimes have an intrinsic value. Suppose, for instance, the vein contains fluor-spar, associated with quartz, it may not only be likely to accompany ores of a saleable character, but it may be of great value as a flux. So the sulphates and carbonates of baryta are substances which form convenient material for certain slags, and are, therefore, a produce of value in a lode, independently of the ore it contains. When the precious metals are in question there is a great amount of care needed in this respect, as there may be in the gossans a sufficient amount of gold or silver to render them valuable. Connected with this subject there are some curious considerations, on which further data are needed—the probable diminution of the precious metals as we descend in depth. This is a subject which we may say is at present *sub judice*, but still there are a great many facts to show that gold and silver do diminish under such circumstances. Thus, in the county of Wicklow, where gossans contained silver and gold, it is found that deeper they have no commercial value. In Cornwall a small quantity of gold used to be found in the tin or stream works, and a few veins used to be cited as producing a little gold, which, now they are further worked, yield nothing of the kind. At Cremnitz, in Hungary, gold has been found "native" in the gossans, and at 100 fms. depth there are galena and zinc, blended with other sulphides, which were associated with silver-glance, and were found to be extremely valuable, and gold also was obtained from these ores; but now they have reached between 200 fms. and 300 fms. in depth the gold is found in minute quantities, and in an invisible form, 4 or 5 ozs., perhaps, at most to 50 cwts. of material; and, at the same time, the silver ore has diminished in quantity, whilst the galena and zinc, and their more common associates, are still abundant.

At the St. John del Rey, perhaps the deepest mine worked for gold, down to 130 fathoms, the supply was rich and plentiful, and it appears to be an exception to the rule of diminishing in depth. In Eastern Hungary and Transylvania the richest of the gold disappears long before such a depth as 160 fathoms is reached. There are some instances to the contrary in the production of silver, as that of Przibram, in Bohemia, where, in 1783, the average yield of silver was only 2 loths (½ ounce); in 1800, when the mine had become deeper, the average was 4 loths; working steadily deeper it became, in 1820, 7 loths; in 1840, 8 loths; and in 1850, 9 loths: and the mines are from 300 to 360 fathoms from the surface. This is, however, an exceptional case, the reverse in a majority of instances being the rule. When the precious metals do occur, and we would form some conclusions from surface appearances, we must adopt measures for that end. Looking for it at certain lengths we must take a portion of the material by sinking pits at intervals, and the material taken from thence should be broken up pretty small, and thrown into a pile, and well intermingled, and the pile divided and sampled, until at last a small portion is obtained which truly represents the whole mass, the assay of which will show what valuable materials there are in the vein. We may then calculate how much per ton will be yielded, the cost of dressing it properly for the market, what it will cost in working, and ultimately what will be left as a profit. In auriferous lodes, where the material obtained has to be stamped fine, the ordinary expenses of the mine ought to be obtained from the valuable products, irrespective of occasional nests of the precious free gold, and that uncertain addition looked upon as giving the extra profit. Another point presents considerable difficulties in many countries where the ores are principally gold and silver. We may fairly trust to realise the metals contained in the material, if they have to be obtained by elaborate subsequent process, but if the gold and silver should occur in so rich a form that pieces may readily be secreted, it is doubtful whether you will be able to work to as much advantage as you ought to do. There are districts were all the miners are subjected to the severest scrutiny on leaving the works; and in such places it is rather a curious sight to see men who are not slaves compelled to strip themselves naked, or submit to a strict scrutiny before they leave the mines. Even all these precautions are evaded by a variety of tricks, and it is almost impossible for either a company or individuals to work mines of this description, and take the full profits of what is got out. He did not say that honest men were not to be found, but there was something about native ores so tempting that it was apt to corrupt the people who had to deal with them. When the minerals of a district were thoroughly understood as to character, some preliminaries were yet necessary before proceeding to actual mining, and particularly with advantage, in the stratified deposits. If we are about to open out coal or iron our course is little more than to sink shafts or drive levels, as the case may be. If the ground is subject to faults or dislocations we shall protect ourselves from undue expenditure in preliminaries by a careful enquiry and consideration before we commit ourselves to a definite mode of procedure. The lecturer, then, by a variety of drawings showed the modes of exploration usually followed, and the tentative processes by which they were carried out, referring particularly by way of illustration to a large map of the Carn Brea Mines. Slate quarries were a popular investment, because it was supposed that they were easily opened, and their contents at once seen, but in point of fact it was one of the most difficult and anxious operations possible, as there were only few tests indeed by which the probability can be determined of there being good slate beneath indifferent material. We have in Wales the largest slate quarries in the world, and their history is very interesting. In most cases vast sums were expended, as much as from 30,000*l.* to 100,000*l.*, before they proved at all remunerative. They might begin with the best prospects, but were led on step by step until vast quantities of rock had to be removed, and enormous costs incurred, before a really saleable slate was obtained. With metalliferous lodes similar difficulties were presented by the gossan, which went to very great depths. The miners all tell you that if you will only go deep enough you will find plenty of ore, but caution was here, again, especially needed. The deeper you go the faster do the expenses multiply, and the matter must be considered from a business point of view which takes in everything. These are some of the considerations which every careful miner must pass under review before he decides whether it is worth while to do more than carry out slight and inexpensive works of an experimental character. In commencing real work different plans will be required in different districts, and one of the first things to be determined is the terms on which the minerals are to be transferred to him. It is usual in many mining countries for the persons who search the ground to obtain a grant to carry out slight exploratory operations before they commit themselves to the expenditure of larger sums. In doing this, the assistance of steam-engines, and other expensive apparatus, are frequently unnecessary. But if it be taken for a long period it is usually done upon a lease (say) for from 20 to 60 years, or even longer. The length of term for which a lease should be taken depends upon the nature of the material to be obtained, and the nature of the operations by which it is to be worked. Thus before expending 50,000*l.* or 60,000*l.* in a slate quarry, it would not be fair to the adventure to take a short lease; but when the material will be sooner worked out a less extended period should be allowed. With respect to partnerships, it is usual in mining in this country for a number of persons to associate themselves together under the Cost-book System, by which those interested should meet at stated intervals at the mine, when the books are all open for their inspection, and when they all have a vote as to the amount of capital to be called up for expenditure, and when all the bills owing must be actually cleared off. If the miners would only act on this system, and go to the place, look at the books, and sweep away their debts, many of those objections would never have arisen which lead persons now-a-days to put so much faith in limited liability companies. The Limited Liability System, however in some respects desirable, is open to the grave objection that the amount of capital has at once to be fixed, and thus a sum much more, or much less, than is needed may be fixed upon. If there be more capital than is sufficient it will lead to extravagance and bad management at the outset, and he could cite numbers of unfortunate concerns which had been wound up under circumstances of great legal complications, and where people had been disappointed, and the undertakings had from this cause fallen to the ground, to the great pecuniary loss of all interested in them. A second important question will arise, as to whether there are facilities for obtaining water on the spot, the price of coal or other fuel, if machine power be needed, and whether power is obtainable on the spot, or must be brought from a distance. It sometimes happens that water has to be brought four, five, or more miles; and in the Harz, and at Cremnitz, in Hungary, there are cases where it is brought 12 English miles by artificial means. Then the height above the sea, and the climate, must be considered. He had known mines highly favourable in other respects, which were scarcely workable on these accounts. A great dearth of water for machinery or for dressing the ore would occasion the most serious inconvenience; and there are places in Spain where the ore cannot be properly cleansed and dressed, except at a much higher percentage of outlay. Thirdly, the means of carriage to and from the mine, whether by river, road, canal, or simple horse-power, are also most important. In the North of England galloways are used to this day, and in Spain mules, where no carriageable roads exist, are employed. Machinery should, in such cases, be constructed so as to be taken in pieces, and carried over the mountains. Fourthly, the facility or otherwise of obtaining fuel for smelting. Fifthly, the supply of labour, amount of wages, and the proximity or otherwise of the dwellings of the workmen to their work. It is obvious that if a man has to walk four or five miles to his labour, a certain amount of value must be taken from his work. Another thing is the capability of the men employed, and under this head there are more complications. There is in some countries the comparative value to be considered of slave labour and free labour. In the early days of mining in Greece, in Attica, and in Egypt, all the labour was of the slave kind; but, as a rule, free labour is always the best. The sixth point he would mention was a caution against over building, in the outset, before the real character of the vein was developed.

DEC. 3.—Having placed before the students many of the considerations which must be regarded before actual mining is commenced, it would be convenient to treat also, as preliminary, the subject of boring, as there are a great many circumstances in which that process would be found necessary, and also the different kinds of implements employed. The practice of boring is likely to become more and more important as the stratified deposits which are so valuable to us have to be sought deeper and deeper beneath the surface, and under the cover of another class of overlying bedded rocks—in fact, the great extension during late years of the coal trade furnishes a potent reason why this mode of investigation should be thoroughly understood, particularly as it was more intimately connected now with the profession of a mining engineer than it used to be in past times. Boring, then, was the mode of penetrating the earth's crust to a considerable depth by implements capable of opening holes from 2¼ in. to 3 ft. in diameter, and in some cases to the size of an ordinary coal shaft—from 12 to 16 ft. The reasons for penetrating by boring in this manner instead of sinking shafts are various. There is this main difference, that whereas in the construction of a shaft we must almost always go to great expense in the removal of water so as to enable men to go down and remove the material displaced, they can in boring work as well with water as without it, and in most cases water is a positive assistance. By this means holes are made from a depth of a few feet to as much as 1000 yards. He had prepared a table of a few of the deepest shafts and a few of the deepest bore-holes. The most remarkable of the latter are in Germany and France. The well of Grenelle, near Paris, which is 1800 ft. deep, started as it were a new era in boring. Great attention was attracted to that work while it was in progress by the serious difficulties encountered and the ingenuity with which they were overcome. After the success of that undertaking some very remarkable bore-holes were put down in Germany. There was one at Mondorff, in Westphalia, of 400 fms., and several others almost as deep. In England we make comparatively a poor show against these examples. That at Trafalgar-square was only 450 ft. deep; but there was an unsuccessful boring at Kentish Town which reached 1300 ft., and a successful one of about the same depth at Middlesbro', in Yorkshire, to a bed of salt rock. But the most remarkable bore-hole in the world for depth is one which he had accidentally met with last summer at Creuzot, in Eastern France, where they had actually bored 920 French metres, or more than 1000 English yards, for the purpose of investigating the deep lying beds of coal. The following is a copy of the table referred to, which was exhibited on the wall:—



A bore-hole is made for one of three purposes:—1. To test the character of the ground to a small depth.—2. As an incidental operation in mining, to ascertain certain matters connected with the minerals to be worked.—3. To obtain access to subterranean reservoirs of fresh water, when they are called Artesian wells, or to brine springs, which may be Artesian or not. With regard to the first, boring is often used in a small way to ascertain the nature of the ground for the foundation of buildings. It is also used for exploratory and precautionary purposes, and to prove the presence, thickness, and depth of the beds to be worked or passed through. Thus, when there is a great cover of overlying material, boring is indispensable, to prove the depth at which it occurs, and its thickness. This may be done by one boring, but by several the direction of the dip, and any variations in thickness or direction may be detected. Thus, when the coal measures are overlaid with the New Red Sandstone, it is useful to discover what geologists would call the different unconformable strata; and it may then be necessay to carry out boring to some depth, and under difficult circumstances. Then, in mining itself it frequently comes into play. Supposing you have a shaft with galleries driven out of it, it may happen the water is troublesome in the upper galleries, a simple bore-hole will tap off the water, so as to enable the men to work on. This is a very common case, but many others might be cited. It is very often the most convenient and cheapest way from galleries to *rise* or work upwards, except that the air is apt to get so foul, and it is difficult to get the smoke of the gunpowder used in blasting out of it; and in such cases, when there is a good current of air in the gallery above a bore-hole is put down, the working is cleared, and the men are able to proceed. One very important class of operations is that of precautionary boring, when mining in the neighbourhood of old men's workings. He could not dwell too strongly on this, as very great peril to men's lives might be rendered harmless; and, to use the mildest expression, such precautionary operations were so often neglected, or too long omitted. Keeping bore-holes in advance of the work at least 5 or 6 yards might have prevented some of those underground inundations which have swept away so many lives, and it was surprising that more attention was not bestowed upon the subject. Having exemplified this point by several drawings, and mentioned several actual cases, he said it was almost impossible to form an idea of the extreme rapidity with which the slightest fracture in the walls of one of these water-charged old workings would fill the new mine. A remarkable instance of it occurred at a salt mine, near Halle, in Saxony, where, in working through uncertain ground, a feeder of water was cut, and in two hours and a half it filled the mine to the top; and at one place it carried several men 250 feet up a shaft by its force, when they were providentially saved. If the plan of old workings can be obtained and depended on, these precautionary measures were not so absolutely necessary, but old plans could seldom be trusted to. Too frequently something was wrong in the survey, or some alteration was made after the survey, and sometimes a cutting would be made as a sort of standage for water, which, being tapped, must lead to mischief.

A third use for bore-holes is to afford access to subterranean water for the supply of manufactures or towns, and to brine springs. These purposes require the bore-holes to be of larger calibre than for mining operations, and, of course, they involve a much heavier expenditure; and the boring apparatus being larger and heavier steam-power is mostly required. The history of boring shows that it has been carried on for many generations, and even amongst that remarkable people the Chinese it is very well known. In England, we have printed evidence of the way in which it used to be employed in the 17th century as an aid to mining. In a very curious old book, called "The Familiar Discourse concerning the Mine Adventure," published in London in the year 1760, it is said—"A deep adit was driven under Esgair-hir, a silver and lead mine in Wales, regarded as a Welsh Potosi, being at its deepest part a depth of 64 yards, to which bore-holes were to be made to tap off the water," and the author thus describes the process:—"We have sharp chisels screwed to iron rods of about 4 feet long, which are also screwed together to what length you please, with which we pounce the rock into a powder, and by continually turning about we keep the hole round, and with the working of the water and the motion of the iron rod the rock or stone thus beat to dust will in great measure rise up to the top of the ground and work out of itself; but when the hole begins to be choked, we take up the rods, unscrew the chisel, and screw on a borer, with which we cleans the hole, and then put down the chisel again, and by this means we can bore a yard in a day in a very hard rock." This describes with almost perfect exactness what the process is now. Belidor and the old French writers seem to have understood the system perfectly, but it was many years after their time before anything of note was done in that way. The lecturer then exhibited the tools used in boring, all of which, he said, it was necessary should be made of the very best iron that could be procured, and any supposed economy in this respect was likely, by rendering a breakage probable, to produce great delay, beside the loss of the tool at the bottom of the hole. The use of the bore-hole was well exemplified in the oil regions of America, where in a single district might often be seen two hundred oil wells in operation at once, all made by boring alone. The rocks there did not present any remarkable difficulty, and there was no necessity to bore to any great depth; but the Americans had distinguished themselves by the great facility with which they had adapted the bore-hole to the purposes they required, Amougst those who had paid great attention to the form and application of boring tools was M. Degousée, who had carried out many works in the Northern coal fields of France, and in Belgium; M. Mulot, of Paris; and M. Kind, a German. It was by the ingenuity of Kind that the deep bore-hole at Creuzot, of which he was the manager, had been carried out.

DEC. 4.—The lecturer commenced by saying that he had mentioned in the last lecture something of the very rapid manner in which bore-holes were put down in the oil regions of America. The methods there employed are of the same description as those of Europe, although not with the same improvements for holes which are carried to greater depths. A bore-hole of a few hundred feet deep may be effected by the ordinary cutting tools and simple T-headed chisels; but the fancies of master borers have devised many other kinds to meet different circumstances. Thus, for instance, when one part of the bore-hole is harder than another it is obvious that the opening will become unequal, and that after a short time would become a serious inconvenience, leading, probably, to a fracture of the rod; and different tools are employed by different bore-masters to obviate these dangers. One of the misfortunes which most frequently occurs, and against which scarcely any care can guarantee, is the fracture of the rods; and in spite of the best iron being used in their construction these accidents will occur; and then different implements are required to extract the broken portions left in the hole, which are called the beche and the tongs. Another point must now be noticed. As soon as the bore-hole gets to any considerable depth—say, beyond 100 yards—great loss of time occurs when it is necessary to withdraw the rods for the purpose of clearing the bore-hole. The main piece has to be held carefully and firmly while rod after rod is unscrewed and removed, and so when the clearance has been made and the rods replaced. A great portion of every day's work is thus lost by this process of screwing and unscrewing, and it has long been a subject on which the ingenuity and inventive powers of the master borers have been employed. One means of shortening this loss of time is now generally employed. It is the erection over the bore-hole of a wooden framework or derrick of great height, so that the rod may be unscrewed in much larger portions. In making a bore-hole they begin by sinking a short shaft, which is useful for many purposes, of which the most important is to act as a safeguard to the perfect perpendicularity of the bore-hole. Over this a derrick is erected of sufficient height, perhaps 60 or 70 ft. The lecturer, by models, illustrated the mode in which the blow was given at the bottom of the bore-hole to pulverise the rock. As the depth increases, so the weight of the pounding tool increases, and this accumulating weight soon becomes a serious matter to lift. The increase may be put at 22 lbs. to the fathom, so that at a depth of 100 fathoms there is a ton at the end of the beam, and at 200 fms. the weight increases tremendously. In these deep borings there is a great vibration of the rod after every blow, which naturally has a tendency to abrade the sides, and the rod itself has a tendency to bend and break by these vibrations. It was also found that the motion is communicated so slowly through the vibrations that the full force of each blow was not obtained. This led to an endeavour to reduce the weight of the upper part of the rod; and Von Œynhausen devised a system of hollow rods by which the weight was distributed somewhat in the following manner:—Suppose at Mondorff the entire length of the rod was 2220 ft., 2130 ft. of that was made to weigh 4½ lbs. per foot, while the lower 90 ft. weighed 18 lbs. per foot. This led to a great gain on the force of the blow, and when the actual weight to be lifted was lightened by the employment of water in the bore-hole, the gain is very considerable indeed. But a much greater step was made by the employment of hollow iron rods, screwed together in convenient lengths, which, when plunged into the water of the bore-hole, gave a very great advantage over solid rods.

Mr. Smyth also described the mechanical contrivances by which those portions of the rods which formed the screws were strengthened so as to bear the tremendous strain put upon them in very deep borings. Another modification was in use in America in the shape of wooden rods, and the very deep borings of Louisville, 2086 ft., and of St. Louis, 2200 ft., were effected by them; the former at 5 in. diameter for some distance, and below that one of 3 inches. The great objection to wooden rods is that under the pressure of the weight of 60 or 70 atmospheres the pores very soon become thoroughly permeated with water, and thus they lose their buoyancy. Another improvement in rods was made by Kind, at former bore-holes, and at Creuzot, by which the striking piece was made to fall separately from the rod, and thus the full effect of the blow was obtained. One of the earliest and most successful improvements of the rod in this respect was made by a Prussian officer, named Rost. During the last few years borings of large diameter have been put down by means of Kind's apparatus, that of the famous well at Passy being 60 centimetres in diameter. Another modification is that by which instead of pounding the rock to powder it is got out *en masse*, the "carrots" thus abstracted varying in length from 6 in. to 3 or 4 ft. This is a great improvement, as by its means not only the nature of the rock is revealed, but the direction of its dip. M. Fauvelle, a Frenchman, and Mr. Beart, an Englishman, suggested the use of a tubular rod, with a stream of water pouring through it, by which much of the detritus is brought up by the upward current in the bore-hole, so that the necessity for unscrewing is obviated, and the bore-hole progresses with greater rapidity. By this plan a bore-hole at Perpignan, in the South of France, was sunk to a depth of 170 metres in 14 days.

SALES OF SHARES BY AUCTION.—The London Stock and Share Company, at their sales by auction, sold shares in the following companies:—Australian Cordillera Gold and Copper Mining Company; Ave Maria Gold Quartz Mine, Mariposa, California; Dun Mountain Copper Mining Company (Limited), New Zealand; East St. Just United Mining Company (Limited); Guadaloupe de los Angelos Gold and Silver Mining Company, Mexico; L'Aigle d'Or; Le Nouveau Monde; Monte Christo Tunnel and Mining Company, San Francisco; Mount Brailly Gold and Silver Mining Company; New Esmeralda Gold and Silver Mining Company; Numa Gold and Silver Mining Company (Limited); Pride of the Antelope Gold and Silver Mining Company, Aurora; Specie Basis Mining Company; British Australian Gold Mining Company; California Quartz Crushing Company; Carbery West Mining Company of Ireland; Cumberland Hematite Iron Ore Company; Forest Queen Gold and Silver Mining Company; Gallt-y-Ffrith Rhedyn Lead Mining Company; Garnett and Mosely Gold Mining Company; Gladbach Zinc Company; Glenaulin Carivilleen Mining Mining Company; Guadalcanal Silver Mining Association, Seville; Monarch Gold Mining Company; New Granada Company; Obernhof Mining Company; River Yuba Gold Washing Company; San Fernando Mining Company; South Devon Great Consols Mining Company; Treburgett Consols Mining Company; Waller Gold Mining Company; West Granada (or Veraguas) Gold and Silver Mining Company; Wildberg Great Consolidated Mining Company.

HOLLOWAY'S PILLS—WRONGS MADE RIGHT.—Every day that any bodily suffering is permitted to continue renders it more certain to become chronic or dangerous. Holloway's purifying, cooling, and strengthening pills are well adapted for any irregularity of the human body, and should be taken when the stomach is disordered, the liver deranged, the kidneys inactive, the bowels torpid, or the brain muddled. With this medicine every invalid can cure himself, and those who are weak and infirm through imperfect digestion may make themselves stout and strong by Holloway's excellent pills. A few doses of them usually mitigate the most painful symptoms caused by undigested food, from which they thoroughly free the alimentary canel, and completely restore its natural power and action

Mining Correspondence.

BRITISH MINES.

BEDOL-AUR.—H. R. Harvey, Dec. 12: We are progressing favourably with the shaft, and are getting some good stones of lead from the north end of it. Jones's pitch in back of the 77, north-east of shaft, has further improved, yielding fully 30 cwts. per fm. The cross-joint seems to be holding west into ground that we have not tried before. Nuttall's pitch in back of the 77, south-west of shaft, is yielding 10 cwts. per fathom. We shall sell about 5 tons of lead ore on Saturday.

BOSWORTHEN PENZANCE CONSOLS.—R. Pryor, Dec. 13: We set the following bargains on Friday last:—Jones's shaft to sink below surface, by six men and two boys, at 6*l.* per fathom; to carry the shaft 12 ft. long by 6 ft. wide, within timber. This shaft is now down 6 fms., and no time will be lost in completing the same to the adit level.—Bosworthen Lode: The adit level to drive west of Jones's shaft, by four men, at 25*s.* per fathom; lode 2½ feet wide, worth 4*l.* per fathom, and likely to further improve. The shallow adit level to drive west of Harvey's shaft, on this lode, by two men, at 25*s.* per fathom; lode 3½ ft. wide, and worth 4*l.* per fathom. These two ends will go on to open up some good tribute ground. The adit level to drive north of Daniel's shaft, on Carn Brea lode, by two men, at 6*l.* 10*s.* per fathom; lode 18 in. wide, producing saving work for tin, with a good appearance.

BOTLLE HILL.—J. Eddy, Dec. 13: South or Copper Lode: The lode in the 12, west of cross-cut, is about 2 feet wide, still producing saving work for tin. In driving we find the lode to make bunches of copper and very good, but so far we have found the copper to be of short duration. The ground has now become easy for working, and the lode in the present end is of a most promising character; cost for driving, 38*s.* per fathom. The lode going east, in the same level, is about 15 inches wide, and now producing good work for tin, but for the present worth nothing for copper. There is no alteration in the ground in the 24, west of shaft; the lode still small and poor.—Main Lode: The lode in the stopes in back of the 12 has improved, now producing good stamps work. The lode in the stopes east of Williams's shaft is about 5 feet wide, and producing about the same quality tinstuff as it has for some time past.

BRONFLOYD UNITED.—T. Kemp, Dec. 12: The winze sinking from the 52 is now down 5 ft.; this winze is 9 ft. long by 6 ft. wide, and its value for that length is quite 4½ tons of lead per fm., or 3 tons per cubic fathom; it is sank 6 ft. to the east of the cross-cut level from the 52, or about midway between that level and the new shaft. The stopes in back of the 52 produce on an average 20 cwts. of lead per cubic fathom. I hope to get the new shaft completed to the 52 in about a month from this date.

BRYN GWIOG.—S. Harper, Dec. 6: The lode in the 102, east of engine-shaft, still continues large—4 or 5 feet wide, strongly charged with blende intermixed with lead, but not sufficient to value; from present appearance I have still strong faith that before long we shall meet with good lead at this point. In order to prove the lode in bottom of this level, we have commenced sinking a few fms, behind the end, and are glad to say we have good lead, and looking very promising. The lode in the 90 east is small, but with a more promising appearance than for some time past; in the same level, west of shaft, the lode is much as for some time past, worth 2½ tons per fathom; the stopes in back of this level, working on tribute, are worth 2½ tons per fm. The winze in bottom of thi' level, east of shaft, is communicated with the 102, thereby giving good ventilation to the bottom men, and also advantageous for working the back of the level, &c.; this ground will now be let on tribute. The lode in the 75, west of shaft, is at present small and poor, although we have driven through good tribute ground for some distance, and we have no doubt but we shall meet with good lead again before long, as we are getting back under the old men's workings, and from all appearances in the upper levels, large quantities of lead have been extracted. Bramwell's shaft, sinking below the 80, is at present in a hard bed of black lime rock and chert, therefore our progress is not so fast as formerly. The lode in back of the 75 east, on the new lode, is fallen off a little in value since my last, now worth 1½ ton per fm.; the ground still continues hard for opening. The tribute department throughout is much the same as for some time past. We estimate our next sampling to be 35 tons of lead.

— S. Harper, Dec. 13: We have this day sold 35 tons of ore, at 13*l.* 6*s.* 6*d.*

BRYNANTLLECH.—W. Wasley, Dec. 13: The ground has improved a little for sinking in Lewis's shaft this week, and everything working well. The hard bed of elvan in the deep adit is nearly all worn out of the end, and the ground consequently improved for driving. I have the men who were driving on the new lode engaged in timbering up the top of the footway shaft, which they will complete next week.

BRYN GWYN.—H. Nottingham, Dec. 11: The level driving south-west from middle of incline, east of shaft, is very hard; and, consequently, slow for progress. It is evident now there is a hard bar of ground in this place, which we must drive through. The lower level, driving south from incline, is without change. The drift in the back of Clark's level continues hard, and yielding some nice lumps of ore occasionally, so I have suspended the driving of this, and put the men to rise in the roof of this level a few fathoms before the end, and we are now nearly high enough for trying the above joint from this rise. There is no change in the south end of Field's level since my last. The tribute bargains in the north part of Field's level is less productive than they were. The tributers in the bottom of the old incline are making fair wages, but they have not made any important discovery of ore ground in this part yet.

CAPE CORNWALL.—R. P. Goldsworthy, Dec. 12: The lode in the 100 end east continues to present a very promising appearance, and retains its size, although the quality of the tinstuff is low, yet the composition of the lode is good; we hope the lode will become more valuable as we approach the junction, granite. The lode in the 100 end west is producing occasional stones of tin. The lode in the 90 end east is without change. The lode in the 90 end west is looking kindly, and is letting out water freely. The lode in the 70 end west presents a promising appearance; ground more favourable. No change to notice in our stopes, except in the stope above the 90, east of winze, in which the lode has improved. Our men are working well, and making good progress in their several bargains.

CARADON CONSOLS.—S. Bennetts, Dec. 10: We have just cut Clymo's lode at the 90, on the east side of the cross-course, and find it about 1 ft. wide, composed almost entirely of gossan, with a little copper; west on this lode, either at the 90 or 80, there is but little alteration, there having been but little of the lode taken down during the week. The gossan lode is beginning to show good spots of ore as we get off the influence of the cross-course. The Jope's lode continues to look very favourable, and to produce a little very good ore.

CARN CAMBORNE.—J. Truscott, Dec. 11: In driving the 60 cross-cut north the end is still in granite, and favourable. The shaftmen have resumed the sinking below this level and cutting tip-plat. The south lode, in the 60 east, is producing stones of ore; west at this level it is worth 12*l.* per fm. In the 50 west the lode is producing stones of ore. The 40 west is yielding saving work. The 30 west is worth 10*l.* per fm.; and the same level, east of western shaft, 5*l.* per fathom. The 24, west of western shaft, is worth 6*l.* per fm. We shall sample again previous to the account.

CASTELL CARN DOCHAN (Gold).—J. Parry, Dec. 12: In the drivage from Smithey stope the ground continues very hard; lode 6 ft. wide, containing a small quantity of lead and pyrites. The quality of the stuff when stamped appears to be the same as usual. I hope to communicate the end of this drivage with the floor of No. 3 stope soon. The other points worked are without alteration since last reported. Gold obtained to-day from Mosheimers, 5 ozs. 13 dwts. We have a stock of blanket-sand on hand. The quantity of lodestuff stamped this month to date is 47 tons.

CENTRAL MINERA.—Thos. Hughes, Dec. 13: Victoria Engine-shaft: The stopes and drivings at the 60 yard level east yield a little lead. The ground in the 40 yard level west is very favourable for progress, and I am daily expecting to cut the lode.

CRELAKE.—W. Skewis, W. Hooper, Dec. 13: The lode in the winze in bottom of the 74 east has been disordered by a flat slide; it is again become more settled, now 2 ft. wide, worth 5*l.* per fm. We have not yet intersected the lode in the cross-cut south from the 50 west; it may, however, be met with here any day. The lode in the 40 west is 2½ ft. wide, composed of mundic, capel, and copper ore, worth 7*l.* per fathom, with a very promising appearance. The lode in the winze in the bottom of this level is 2½ ft. wide, containing mundic, capel, and copper ore, worth 5*l.* per fm. We hope to communicate the rise in the back of this level with the 28 in the course of a week or ten days from this time. No change to notice in the cross-cut south from engine-shaft.

CROWAN AND WENDRON.—R. Reynolds, Dec. 12: All our surface work is progressing as fast as circumstances will admit. We have two men stoping the back of the adit, where the lode is about 18 in. wide, producing good saving work for tin. We have also opened on the back of the tin lode about 100 fms. further west than the present workings, and find it contains stones of tin, but we cannot go down till our machinery for pumping is got ready.

CUDDRA.—F. Puckey, A. Cundy, Dec. 12: Walker's shaft is sunk 9 fms. below the 130 fm. level; the ground is still favourable for sinking. The 130 fm. level is extended west of the shaft by the side of the lode 11 fms. We have now about 2 fms. further to drive to reach the winze, which is sinking below the 117 fm. level; at that point we shall cross-cut the lode to prove its value. In the 117 end west we have cut through the tin part of the lode, which is 6 ft. wide, producing a little tin, but not sufficient to pay for working. In the winze sinking below this level the lode is 10 ft. wide, and of a very promising character, composed of quartz, peach, and tin, still worth for the latter 40*l.* per fathom for that width. In the stope in the back of the 117 fm. level, behind the end, the lode is 4 ft. wide, producing good branches of tin, and worth 10*l.* per fathom. In the stope in the back of the same level, east of the winze, the lode is 12 feet wide, containing capel and gossan, but is not so good for tin, now worth for the width of the lode 12*l.* per fathom. In No. 1 stope, in the bottom of the 105 west, the lode is 6 ft. wide, and worth 10*l.* per fathom.

DEVON AND CORNWALL UNITED.—T. Neill, Dec. 11: Since the meeting we have broken some small stones of ore from the 24 cross-cut.—William and Mary: The lode in the 34, west of the engine-shaft, is much improved; lode 4 ft. wide, worth 6 tons of ore per fm., and likely to further improve.

EAGLEBROOK.—H. Tyack, Dec. 8: The men have been engaged in the 30 west in taking down the lode, which is from 5 to 6 feet wide, and much of the same description as when I last wrote you, composed of carbonate of lime and, decomposed porphyry, with small strings and strong spots of lead ores throughout; I am in great hopes that this level will improve again shortly. The 30, east of cross-cut, is being pressed on with all possible speed, and carrying about 4 feet of the north part of the lode, composed of large lumps of mundic, blende, and clay-slate, with strong spots of lead ore.

EAST CARADON.—J. Truscott, Dec. 12: Caunter Lode: The 100 east is worth 8*l.* per fm.; the 100 west, stones of ore; and the 90 east, 8*l.* per fm.—South Lode: The 100 east is poor; the 90 east, 5*l.*; the 70 west, 12*l.*; the 70 east, on south part, 10*l.*; and the 70 west, on south part, 6*l.* per fm.

EAST CARN BREA.—J. Richards, Dec. 12: Thomas's Engine-shaft, No. 3 Lode: In the 80 east the lode is 15 in. wide, composed of capel, mundic, fluor, and a little copper ore. The lode in the 80 west is 3 ft. wide, and will yield 2 tons of copper ore per fathom. In the 70 east the lode is 1 ft. wide, and consists of capel, quartz, and a small portion of copper ore. In the 60 east the lode is 1½ ft. wide, and worth ½ ton of copper ore per fathom. The lode in Cock's winze, in bottom of the 60 east, is 1 foot wide, and consists of quartz, fluor, and a little copper ore. In the 50 east the lode continues still in an unsettled slate.—Buckley's Shaft: In the 60 east, on No. 5 lode, the lode is 1 foot wide, composed of capel, quartz, mundic, and good stones of copper ore.—No. 6 Lode: In the 60 east the lode is 15 in. wide, and consists of quartz, mundic, fluor, and a little copper ore. The lode in the 60 west is 1½ ft. wide, and worth 1½ ton of copper ore per fathom. The lode in the 50 east is 1½ ft. wide, and worth 1½ ton of copper ore per fathom. The lode in Davey's rise, in back of the 50 east, is 1 ft. wide, producing saving work for copper ore. The lode in Richards's winze, in bottom of the 50 west, is 1½ ft. wide, and worth 1½ ton of copper ore per fathom. In the 40 east the lode is 1 ft. wide, consisting of capel, quartz, fluor, and good stones of copper ore.

EAST CHIVERTON.—John Grose, James Nancarrow, Dec. 12: The discovery of lead on Chiverton lode, east from boundary shaft, still continues, and the lode is 3 ft. wide, driving at 28*s.* per fathom; lode for the last 9 ft. composed chiefly of rich gossan, carbonate, and blue silver-lead ores, such as is very seldom found at such a shallow depth; and from the general nature of the lode, it presents every known indication of being the top of a rich deposit of silver-lead ore. We have no change to report in the 35 engine-shaft. We do not hesitate to say that, looking at this discovery, for the depth seen, there is no doubt that ultimately the shareholders will be well repaid for their patience and outlay.

EAST GUNNISLAKE AND SOUTH BEDFORD.—J. Phillips, Dec. 13: The lode in the shallow adit is looking much the same as when last reported on; the same remark will apply to the rise in back of the same.

EAST LAXEY.—W. R. Rowe, Dec. 11: Since the report of last week we have had specks of copper in the 20 north, and the lode a little more promising. As this is the only underground work at present, and of such great importance, I think it would be well to force it by eight instead of six men, two every six hours.

EAST ROSEWARNE.—J. James, Dec. 13: King's shaft is down to the 95 fm. level. We shall commence at once to drive east and west from the bottom of the shaft, in a lode about 1 ft. wide, worth 6*l.* per fathom, and the ground easy for driving. In the 85, west of King's shaft, the lode is 18 in. wide, producing stones of ore, and the ground hard for driving. In the 43, east of Hallett's shaft, the lode is 6 to 9 in. wide, producing mundic and a little copper ore. The 43, west of King's cross-cut, is much as last reported. The two stopes in the back of the 85 east are each worth about 12*l.* per fathom. The stope in the back of the 85 west is worth 4*l.* per fathom. The stope in the back of the 75 east is worth 5*l.* per fathom.

EAST SNAEFELL.—W. H. Rowe, Dec. 10: The new adit end, and the 9 fm. level driving to meet it, are both poor at present. Whether we shall discover any more ore in the remaining 12 fms. of ground (between the two ends) or not, I am perfectly satisfied of one thing—that we have a better prospect already than there was at North Laxey at the same depth.

EAST ST. JUST UNITED.—J. Carthew, P. Casley, Dec. 12: Since our last report we have holed the winze from the 10 to the 20, on the Guide lode, south of engine-shaft; we are now driving the 20 south on this lode in very kindly tin ground; lode 2 feet wide. We are driving the 10 east from engine-shaft, in tin ground worth 4*l.* 10*s.* per fm. We are clearing up a shaft west of engine-shaft, between the 10, and find tin ground in the east and west end of this shaft, which will pay well for working. We are driving the 20 east and west from the Cranjack shaft in a large kindly tin lode. All our tributers are working well.

EAST WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Dec. 12: In the 95 west the elvan is wearing out, and the lode is from 1 ft. to 15 in. wide, and producing some very good ore, which is letting out more water. From the appearance of the lode to-day we are of the opinion that it will shortly improve to value again. The lode in the winze sinking below the 85 west is 2½ ft. wide, yielding 4½ tons of ore to the fathom, and, from the appearance of it, it indicates a still greater improvement. We are hoping that the 95 will shortly drain this, when it will lay open a good piece of orey ground. All the other places are looking the same as before reported.

EAST WHEAL LOVELL.—R. Quentrall, Dec. 12: The turnpike shaftmen have been engaged casing and dividing the shaft, and will commence driving east and west to-morrow.—North Lode: We have not yet cut the lode in the 60 cross-cut, where the ground continues hard. The mine generally continues to open out very well.

EAST WHEAL RUSSELL.—John Goldsworthy, Dec. 12: At Homersham's shaft, sinking below the 140, the ground continues slow for progress. In the 140, driving east of Roberts's cross-cut, the lode is 4 ft. wide, composed of capel, quartz, prian, and mundic, and produces rich stones of yellow copper ore—a very promising lode. In the winze sinking below the 130 the lode is 4½ ft. wide, composed of capel, quartz, prian, and mundic, and produces from 4 to 5 tons of copper ore per fathom; the lode has fallen off in value. A branch of capel dropped into the lode, which is by all appearance again leaving the lode which is now worth 20*l.* per fathom. In the costeaning department, in the north part of the sett, we have a lode about 3 ft. wide, underly south, composed of capel, quartz, prian, gossan, mundic, iron, &c., altogether a good-looking lode, embedded in white killas of a good description.

— J. Richards, Dec. 13: In sinking Homersham's shaft the progress is rather slow, owing to the difficult nature of the ground.—Homersham's Shaft: In the 140 east, and east of Roberts's cross-cut, the lode is of good size, containing quartz, mundic, capel, prian, and rich stones of copper ore, altogether very promising. In the winze sinking below the 130 east the lode is worth 20*l.* per fm. In sloading the northern portion of the sett a lode, 3 feet wide, has been met with underlying south, composed of strong capel, quartz, prian, gossan, mundic, and iron, and has a healthy appearance.

FURSDON.—Capt. Collins, Dec. 13: Our setting for December is as follows:—A rise in back of the 31 west to four men, at 5*l.* 10*s.* per fathom. A cross-cut to drive south in the 21 east by four men, at 6*l.* per fathom. A cross-cut to drive south in the 11 east by two men, at 4*l.* 10*s.* per fathom. A winze to sink in bottom of the 11 east by four men, at 10*l.* per fathom. A stope in back of the 11 east to four men, at 3*l.* per fathom. The lode in the stope in back of the 11 east, near the back of the level, is worth about 15*l.* per fathom. We are now stoping the back of the level for an advantage to work the ground above, where the lode is worth from 25*l.* to 30*l.* per fathom. The lode in the winze in bottom of the 11 east is worth nearly 25*l.* per fathom. No change in any other part of the mine.

GAWTON COPPER.—Geo. Rowe, Geo. Rowe, jun., Dec. 8: The sinking of the new engine-shaft is continued by six men below the 60, and our progress very satisfactory. We have cut into the lode at the 60 cross-cut 6 ft., and meet with some very fine stones of copper ore. The 50 cross-cut is driven through the north capels of the lode, which is at this point over 6 fms. wide. The lode in the stopes in back of the 50 is worth 4 tons of ore per fm. The lode in the stopes both east and west of winze, in bottom of the 40, is worth from 3 to 4 tons of ore per fathom. The lode in the winze sinking below the 50, west from old sump, has never looked better, and is now worth 10 tons of ore per fm. We have not yet succeeded in forming a communication with the rise in back of the 50 and the winze sinking below the 36, but they are getting very near each other.

GREAT NORTH DOWNS.—Wm. Rich, C. Bawden, Dec. 12: During the past few days Sleggan's shaftmen have been busily engaged putting in penthouse, dividing off the skip-shaft below the 70, and clearing up the bottom of the engine-shaft: we hope to be in full course of sinking in a day or two. The 70 fm. level end west is worth 6*l.* per fm., and looks promising to improve. We have begun to drive the 58, east of Butler's; so soon as we have extended a fathom or two we shall fix the skip-road from the 47 to the bottom of the shaft.

GREAT RETALLACK.—G. R. Odgers, Dec. 8: Setting Report: A side tie around the engine-shaft, on No. 1 lode, by six men, at 25*s.* per fm. A plat to cut at the adit level, No. 2 shaft, by four men, at 7*l.* 10*s.* per fm. The adit level to drive north on the Trebellan lode, by two men, at 21*s.* per fm., the month; the lode is 20 in. wide, of a pretty quartz and prian, with occasional stones of lead—a most promising lode. The adit to drive south, by two men, at 18*s.* per fathom, the month; the lode is 8 in. wide, of much the same character as that in the north end, the ground being equally as favourable for making lead. A trial shaft to sink by four men on a branch cut in the costeaning at 10*s.* per fm.

GREAT SOUTH CHIVERTON.—J. Nancarrow, J. George, Dec. 7: Gifford's engine-shaft is now in full course of sinking, and the ground is all that can be desired for the production of lead. The lode in the 20 east is 4 feet wide, carries a strong flookan, and has altogether a most promising appearance. The water is rather on the increase.

GREAT SOUTH TOLGUS.—J. Daw, Dec. 12: Friday last was setting-day. In the 166, east of Lyle's shaft, the lode is 2½ ft. wide, producing 1 ton of ore of ore per fm.; set to four men, at 5*l.* per fm. In the 140, east of new shaft, the lode is still disordered by the cross-course, but is producing stones of ore; set to six men and three boys, at 4*l.* 10*s.* per fm. In Noel's shaft, sinking below the 125, the lode is 1½ ft. wide, producing 3 tons of ore per fm.; set to six men and three boys, at 15*l.* per fm. In the 125, east of Noel's shaft, the lode is small and unproductive; set to two men and two boys, at 4*l.* 10*s.* per fm.

GREAT WHEAL BADDERN.—R. Pryor, H. Tregoning, Dec. 8: Hill Brothers Engine-shaft: The 75 cross-cut, driving south, continues in the elvan; from present appearances we believe the ground is undergoing a change, which indicates that we are approaching near the Baddern main tin lode, which cannot be but a small distance in advance of the end; when cut into we anticipate good results therefrom. The 70 fm. level end west, on the lead lode, is progressing towards the western mine; lode 16 in. wide, composed of rich sulphur, mundic, flookan, and spots of silver-lead; ground much the same, in a congenial elvan course. The balance-bob is delivered on the mine in good condition, and the masonry we expect will be completed in the early part of the coming week, when no time will be delayed in putting it in operation.

GWYDYR PARK.—W. Smyth, Dec. 11: There is no particular change to notice in either of the ends in Gwyn Lliflon adit since last reported.

HALLENBEAGLE.—W. Bawden, Dec. 8: The character of the lode in Pinniger's engine-shaft is much the same as last reported; I think from present indications that we are near the intersection. At the 56, east of Stone's shaft, we have seen the cross-course, and have almost cut through it. The 47, east of Stone's, is without alteration since last reported. In the 61, east of said shaft, the lode is 3 ft. wide, worth 5*l.* per fm. In the 56 cross-cut, north of Pinniger's shaft, the ground is becoming more mineralised, and I think we are nearing the lode. At Reed's shaft, sinking below the 53, the lode is 18 in. wide, worth 15*l.* per fm. In the 53, east of Reed's, the lode is 1 ft. wide, containing a little copper ore. In the 53, west of said shaft, the lode is 18 in. wide, worth 6*l.* per fathom. In the winze sinking below the 53, west of Reed's, no lode has been taken down for the past week. At Bawden's shaft, sinking below the 43, the lode is 1 ft. wide, containing a little ore.

LADY BERTHA.—J. Metherell, S. Harpur, Dec. 15: We have now come up from underground, and find the 41 east is still improving—in fact, a good lode in the back; we hope to be able to report the same valuable soon. There has been no lode taken down in the 30 east; the water is still flowing very fast.

LOVELL CONSOLS.—W. Chappell, Dec. 13: The lode in the 12, driving west, is 1 ft. wide, composed of prian and quartz, and producing good work for the stamps. This week we have broken richer stones of tin from the lode than the specimens forwarded you. The men are making good progress in driving the cross-cut north to get under the perpendicular shaft, which will take about four weeks from this time to accomplish. When the perpendicular shaft is holed to the back of the cross-cut it will thoroughly ventilate the 12, and enable us to set some tribute pitches, as well as for the economical discharge of stuff. The engine and pitwork are in good working order, and consuming very little coal, about 8 tons per month.

MINERA UNION.—W. T. Harris, Dec. 13: Douglas's Shaft: The ground in the sinking below the 40 yard level contains chert and spar, very hard for progress. The ground in the 40 yard level cross-cut is the same as last reported.—Brabner's Shaft: The stream of water reported in my last as having been cut in the cross-cut to the red vein is still very large; this I consider a good indication, and evidence of a near approach to the lode. All other points make good progress, but without material alteration in prospect.

MOLLAND.—T. Bennetts, Dec. 12: The south part of the lode which we are carrying in the 72 east is still 4½ feet wide, presenting a very promising appearance, with all the elements of an improving nature, and will now produce full 15 cwts. of ore per fathom. In the winze sinking below this level we have cut a floor, which has divided the lode, and let down the water in the level between this and the end, which I do not regard as an unfavourable indication. We have, however, just touched the top of the lode under the said floor, and when we have opened on it a foot or two I have no doubt it will present the same promising appearance as before.

NEW BIRCH TOR AND VITIFER CONSOLS.—Wm. Skewis, R. Trevarthen, Dec. 11: Hambly's Shaft: The lode in the 48 east is small, and for the present disordered by a slide coming in from the north; this change, we think, is only temporary. The lode in the rise in the back of this level is worth 4*l.* 10*s.* per fathom. The lode in the 36 is 1 foot wide, yielding saving work for tin. The lode in the 24 fathom level east is small, and for the present is producing saving work only.

NEW CROW HILL.—Captain Trelease, Dec. 11: Saturday being our setting-day, the following bargains were set:—The 70 fm. level, east of new winze, to six men, at 4*l.* per fathom; the lode is 4 ft. wide, composed of flookan, mundic, jack, and soft spar, spotted with lead ore—a fine looking lode. The new stope in back of the 55 fm. level at 2*l.* per fm., and 4*l.* per ton for lead—lode from 4 to 6 ft. wide, producing fine stones of ore. No. 1 stope, in back of the 55, set to 12 men, at 5*l.* per ton for ore, and 20*s.* per fathom for the ground, average width 5 ft., worth 12 cwts. of lead ore per fm. We are not yet high enough to touch the best part of the stope, which is still worth 50*l.* per fm. The 35 fathom level is set to six men, at 3*l.* 15*s.* per fm.; the lode is 3½ ft. wide—a strong lode, producing fine lumps of lead ore. Louisa shaft is set to nine men, at 2½*l.* per fm., which is a moderate price for an engine-shaft.

NEW EAST BIRCH TOR AND VITIFER CONSOLS.—Wm. Skewis, R. Trevarthen, Dec. 11: The ground in the side of the deep adit level continues favourable for driving, and the men are making fair progress.

NEW PEMBROKE.—F. Puckey, J. Puckey, Dec. 10: In the past month we have sunk the engine-shaft 9 ft. below the 60, cut the cistern-plat, put in bearers and cistern, and fixed the plunger-lift at the 60; we shall now urge on the sinking of the shaft with all possible speed. In the 60 cross-cut, driving south, east from the engine-shaft, we expect that we are near the lode, as there is more water issuing from the end. In the western stope in back of the 60, west of the shaft, the lode is 2½ ft. wide, and worth 9*l.* per fathom for tin. In the eastern stope, west of cross-cut, the lode is 2 feet wide, worth 7*l.* per fm., and looking promising for an improvement. In the stope in back of the 45, east of the cross-course, the lode is 3½ feet wide, composed of friable quartz and soft peach, in places producing rich work for tin, and worth 15*l.* per fm. In the 45 cross-cut, driving north to intersect the lode west of the cross-course, the ground is still favourable, the present price for driving being 3*l.* 10*s.* per fm. In the 30 cross-cut, driving north of the engine-shaft, we have no change to notice since last reported. We have put the new boiler to work, and every part of the mine is now in a good course of working.

NEW TAMAR SILVER-LEAD.—Jas. Phillips, Dec. 13: The lode in the 10 is looking as well as when last reported on. The lode in the rise in the back of this level is opening out very nicely; it is at present worth 8 cwts. of rich silver-lead ore per fathom.

NEW TRELEIGH.—S. Michell, Dec. 13: There is nothing new to report on to-day. We sampled on the 11th inst. 50 tons of ore, and are pushing on as fast as possible in getting another little parcel.

NEW WHEAL TOWAN.—Richard Pryor, Dec. 12: The lode in the adit level, driving west, is full 3½ feet wide, and worth 1½ ton of copper ore per fathom, with a good appearance, but the ground much harder than usual.

NORTH DOLCOATH.—J. Vivian and Son, J. Paull, Dec. 10: We have driven the 100, south from engine-shaft, 51½ fms., and are satisfied that there is no more lode in this direction. We are now, therefore, confining our operations to driving the same level east from engine-shaft, on the north part of the lode, and are now in about 2 fms., where we have pleasure in saying the lode has much improved in character; it is 1½ ft. wide, increasing in size, composed principally of cellular quartz, with a large admixture of mundic. We have some fathoms yet to drive to reach the point at which it may be expected the junction between the north and south parts of the lode will take place.

NORTH DOWNS.—John Grenfell, Dec. 11: King's Shaft: The 40, west of this shaft, on the south lode, has further improved since our last, now worth 12*l.* per fathom. The stope in the bottom of this level, east of rise from the 50, is worth 7*l.* per fathom. A stope in the back of this level, 3 fathoms behind the end, is also worth 7*l.* per fathom, and likely to improve as it gets nearer the end. A rise in the back of this level, 8 fathoms behind the end, is worth 5*l.* per fathom.—New Brigan Lode: This lode is improving in appearance. There is a branch forming in the footwall, composed of mundic, spar, and spots of copper ore, and is letting out more water than it has since we have been driving on it. The character of the ground is also good for mineral, and we look for an early improvement. No change to notice in any other part of the mine.

OKEL TOR.—J. Rodda, Dec. 13: The lode in the 80 cross-cut is of the same character as last reported. Bate's stope, in the back of this level, is improved, and will now yield 5 tons of ore per fm. Reynold's stope, in the back of the same level, will produce 3 tons of ore per fm. Tregonning's stope is rather poor for the present, but will look better shortly. In the 65 east the ground is still easy for driving, and the lode is looking more promising. The lode in Rowe's winze, sinking in the bottom of this level, is producing 3 tons of ore per fm. We have four stopes working in the back of the 65, producing on an average 3 tons of ore per sm. The 50 cross-cut south is into the lode about 9 ft., and the last 3 ft. driven, I am happy to say, is good work for copper ore, and will yield 4 tons per fm.; and the general appearance of the lode is such as to warrant our having a good course of ore at this point; the water is issuing very strongly from the lode, therefore I am of opinion that we shall have some feet further to drive before we reach the south wall. Hill's stope, in the bottom of the 50 east, continues to yield 2½ tons of ore per fm.

OLD GUNNISLAKE.—H. Rickard, Dec. 12: The lode in Parker's shaft still maintains its size and appearance, with spots of rich copper ore; a more promising lode cannot be seen for the production of copper ore in depth. The men working well.

PEDN-AN-DREA UNITED.—W. Tregay, J. Thomas, Dec. 8: Sump: In the 140 west the lode is 2 ft. wide, producing stones of tin and copper ore. In the 130 east the lode is worth 4*l.* per fm. In the stope behind this end the lode is worth 14*l.* per fm. In the 130 west the lode is 6 ft. wide, and worth 15*l.* per fm. In the stope behind this level the lode is 12 ft. wide, and worth 20*l.* per solid fathom. In the 120 east winze the lode is worth 10*l.* per fm. In the 120 west winze the lode is worth 9*l.* per fm. In the 100 east end the lode is worth 6*l.* per fathom. In the 100 east rise the lode is worth 6*l.* per fm.—Cobbler's: We have intersected a lode in the 90 north, which corresponds in underlie, &c., with the large lode worked by the ancients in the north part of Pedn-an-drea lands, whence they drew their large supplies of tin. As the old men worked only to about the 47, and this lode is now intersected at the 90, you will see the importance of this. The lode as seen in the cross-course is 3½ ft. wide, producing good stones of tin and copper ore, and no doubt will improve on driving into clear ground, which we hope to commence next week; there is a large quantity of water coming from here. In the 110 west the lode is worth 10*l.* per fm. We sold on the 30th ult. at Carvedras 6 tons 5 cwts. 1 qr. 15 lbs. of black tin, for 293*l.* 14*s.* 2*d.*

PENHALLS.—S. Bennetts, Wm. Higgins, Dec. 8: The lode in the 60 east end is looking more promising than it has for some time past, although as yet not more valuable. In the 60 west, however, the lode has improved, and at present worth fully 5*l.* per fm.; this looks well for the western ground. The 50 west has also improved, and is now worth 10*l.* per fm.; the east end on this lode is not quite so valuable as it has been. Both the 50 east and west, on Cowling's lode, are much as last reported. The 50 cross-cut south is extended as far as the perpendicular of the winze from the 40, and the men have commenced rising towards the same; we hope to communicate these points in the course of a month. The pumping-engine boiler has been thoroughly repaired, and is again at work.

PENHALE WHEAL VOR.—W. Chappell, W. H. Martin, Dec. 12: In the 74, driving east of Hollingsworth's shaft, the lode is 2 ft. wide, composed of peach, prian, and good stones of tin. In the cross-cut driving south in the same level we have cut a large stream of water, from which we consider we are approaching Penhale lode. In the 64, driving west of the same shaft, the lode is 3½ feet wide, producing tin, but not sufficient to value. Sanford's shaft, sinking below the 74, is now down 6 fms. 3 ft.; lode 3½ feet wide, composed of prian, peach, quartz, and tin, with every indication of a speedy improvement. In the 74, driving west of same shaft, the lode is 2½ ft. wide, producing good stones of tin. No alteration in the 74, east of the latter shaft, since last report. The men are making good progress in driving the cross-cut south in the 64, east of Sanford's shaft, and working stem times round, so as to cut Penhale lode before the next general meeting. We have four men driving on the course of the new lode cut in the 38, from Battye's, on half tribute, and earning good wages. We intend on Monday to set a rise from the 74, west of Sanford's, to communicate with the 64, which we believe will lay open a good piece of tribute ground, as well as thoroughly ventilate the eastern part of the mine. We are preparing a good parcel of tin ready for market against the next general meeting.

PRINCE OF WALES.—J. Gifford, W. Gifford, Dec, 11: In the 55, both north and south, the ground is favourable for driving, and very congenial for mineral. In the 45 fm. level east the lode is still 4 feet wide, and worth 20*l.* per fathom. In the 45 west there is no change since last reported, still worth 10*l.* per fm. In the 45 east we have communicated the rise with winze in bottom of the 30. The ore-bearing part left standing in the south of rise appears to be standing south of all our workings to surface. We have set to stope east and west of the rise in back of the 45 east, to six men, at 2*l.* 10*s.* per fathom; the lode in each stope is worth 20*l.* per fm. We have set to drive the 30 east, by two men, at 3*l.* 10*s.* per fm.; also the 30 west, by two men, at 3*l.* 10*s.* per fm.

PROSPER UNITED.—J. Nicholls, Dec. 12: The lode in the 90, west of Hand's, is very strong and kindly; it now yields 20*l.* worth of tin per fm. The 80 west is poor. The winze in the bottom of this level is producing 2 tons of ore per fathom, and the stopes in the back are of about the same value. The 70 west is producing saving work for tin. The 60 west is suspended for the present, and the men are engaged sinking a winze in the bottom of this level, the lode in which is producing 3 tons of ore per fm. No change to notice in the 50, nor any other end in the mine. The pitches are looking much as usual. The dressing is going on satisfactorily, and the machinery all in good order.

REDMOOR.—T. Taylor, Dec. 13: The ground in the south engine-shaft is still getting harder. The men are making all haste to get the lift complete. No change in the drivage since last report.

ROARING WATER.—H. Thomas, Dec. 11: The lode in the bottom end, west of Grady's shaft, is producing good copper ore, but it does not appear quite as strong in the lower part of the driving as last reported; I look on this as temporary, the ground being a little harder; the middle and upper part of the end is strong and orey.

ROSECLIFF AND TOLCARNE.—R. Pryor, J. Phillips, Dec. 12: The ground in Lindo's engine-shaft, sinking below the 40, is much the same as when last reported on. We have commenced to drive on Nos. 3 and 4 lodes. No. 3 lode is 3 ft. wide, composed of mundic, blende, prian, and good stones of lead—a very kindly lode. No. 4 lode being disordered by the north and south lode, we shall not be able to say much about it until we get out of the influence of the same.

ROSEWARNE CONSOLS.—J. Nancarrow, R. Knuckey, Dec. 12: The 100, east of Ellen's, is now through the cross-course. We are driving in killas, and expect to get on faster. The east stope above the 90 is worth 5*l.* per fathom. The west stope above the 90 is worth 5*l.* per fathom. The stope below the 80 is worth 4*l.* per fathom. The rise above the 80, west of sump, is up 5 fms., where we have a very good looking lode, which yields fine stones of ore. The lode in the 70 west is larger, and yields a little ore. This end will shortly be communicated with the rise above the 80 west. The tributers are all working regularly, and raising the usual quantity of ore.

ROSEWARNE UNITED.—T. Richards and Son, E. Carthew, Dec. 13: The lode in the 90, west of engine-shaft, contains a little copper ore. In the 80 west the men are engaged in rising against the winze sinking below the 70; there has been no lode taken down since they have commenced to rise. The lode in the winze sinking below the 70 is worth 10*l.* per fm. There has been no change in any of the other bargains since last reported on.

SNAEFELL.—William Kitto, Dec. 10: During the past month we have sunk the engine-shaft 7 feet below the 40, and cut out trip-lodge at that depth. The ground is now harder than usual, and more quartz getting into the lode, which, in this neighbourhood, I like to see. The 40 fathom level end is driven north

from the engine-shaft 10 fathoms, and we have a little lead and blende the whole distance, but not of much value. The lode here is very powerful (how wide I cannot say, as we have not yet cut it through at this level), and made up with very promising stuff for the production of lead ores. The 25 fathom level end, driving north, is at present into a complete nip. We have a very large lode in the south adit, but being shallow, it is rather too soft for this district; however, as we get under the mountain no doubt we shall find a change. Everything is going on very well; the only thing wanting is more ore.

SORTRIDGE CONSOLS.—James Richards, Dec. 13: At Hitchins's engine-shaft, sinking below the 122, the ground continues favourable, and good progress is being made. In Scoble's stope, in back of the 40, east of the cross-course, the lode is worth ⅛ ton of ore per fathom.

SOUTH CONDURROW.—J. Vivian and Sons, Wm. Williams, Dec. 8: King's shaft is now 10 ft. under the 61; the lode as far as cut through being 9 ft. wide, without the south wall being reached; its character is without any alteration since last reported. In the 51, east of King's shaft, the lode is 3 ft. wide, containing a large proportion of soft quartz, and presenting a favourable appearance. In the 51, west of King's shaft, we are still driving by the side of the lode, which will be taken down next week. In the 40, west of Vivian's shaft, the lode is 1 ft. wide, and yielding good stones of copper ore. In the 30 west the lode is 2½ ft. wide, and increasing in size, being composed principally of quartz and chlorite, with mundic and copper ore scattered throughout it, there being sufficient of the latter to pay for driving. In the 20 west the lode is 1½ ft. wide, producing large and rich stones of grey copper ore; the appearance of this end being more promising than for some time past.

SOUTH DARREN.—J. Boundy, Dec. 10: The lode in the 60 west is 2½ feet wide, and it has a very promising appearance, producing some good lead and copper, and letting out more water, and from present appearance I have every reason to expect to meet with a good bunch of lead shortly. There is no particular change to notice in the 50 west since last reported. The lode in the 40 west is again forming its regular underlie, which has been disturbed by a cross measure of ground, referred to in former reports; it is producing saving work, and has a very promising appearance. All other points throughout the mine are progressing satisfactorily, but without any material alteration to notice since my last. Last week one of the crushing-mill rollers broke, and on Friday we had the new one delivered on the mine, but I am sorry to say it was not cast according to order, and we were obliged to send it to the foundry again; this will cause a little delay in the dressing.

SOUTH HERODSFOOT.—W. Goldsworthy, Dec. 12: The engine-shaft is in regular course of sinking below the 70, and good progress is being made. There is no alteration to notice in the ground since we got below the elvan, still a very beautiful run of killas. The engine and pitwork are in good order and working well.

SOUTH OF SCOTLAND.—P. Hawke, Dec. 11: Engine-shaft: Clark's lode east at the 30, towards the junction with No. 5 lode, is 2 ft. wide, composed of kindly admixtures, such as peach, prian, and quartz, with spots of blende intermixed, indicating a decided change for the better. No. 5 lode south, at the 18, is at present severed by a horse of grey stone; the parts of the lode are, however, converging to a point as we progress with the driving, and when that occurs I anticipate a very good effect on the lode. The stope in the back of the 18, on the junction of Nos. 1 and 5 lodes, is worth for lead about 70*l.* per fm.—Flat-rod Shaft: No. 1 south, at the 10, in this part of the mine is 6 ft. wide; a portion of the lode on the footwall is 3½ ft. wide, composed chiefly of killas; the other part of the lode on the hanging-wall, for 2½ ft. wide, consists principally of quartz, which makes the lode exceedingly kindly. This lode north, at said level, for 4 ft. wide, contains quartz and gossan, with spots of lead and yellow copper ore intermixed; the lode becomes more porous as the driving advances, and the water begins to percolate freely from the end, as we approach the run of lead ground passed through in the Parkfield adit; the increase of water from the lode is an approved feature, and denotes something of importance at hand. The machinery, both steam and water-power, works satisfactorily.

SOUTH WHEAL GRENVILLE.—G. R. Odgers, Wm. Bennetts, Dec. 8: We have not taken down any lode in the engine-shaft since our advice for the meeting; we hope to take down some more against Saturday next, when you shall be fully advised.

ST. IVES WHEAL ALLEN.—J. Daniell, Dec. 10: There is no alteration in the mine to notice since last week. The [illegible]40 fm. level end east, on the carbona lode, is still worth 7*l.* per fm.

TOLCARNE.—Dec. 12: New North Lode: The lode in the 60 fathom level, west of the cross-cut, is 18 in. wide, composed of spar. In the 50 fm. level, west of the cross-cut, the lode is 20 in. big, consisting of soft spar and ore, yielding 1 ton of the latter per fm. The lode in the 40 fm. level, west of the cross-cut, is 14 in. big, composed of soft spar and ore, yielding fully 1 ton per fm. In the 20 fm. level, west of the cross-cut, the lode is 10 in. wide, composed of spar and ore, yielding ½ ton per fm., and is promising for further improvement.—Field's Lode: In the 40 fm. level, east of Field's shaft, the lode is 20 in. wide, composed chiefly of soft spar and ore—opening tribute ground. The lode in the 30 fm. level, east of Field's shaft, is 14 in. wide, composed of spar. The ground in the adit cross-cut south is rather hard.

TREVENEN AND TREMENHEERE.—J. Medlin, C. George, Dec. 12: The 197 end is worth 12*l.* per fathom. The stope in this back is worth 9*l.* per fathom. The ground in the 187 end is fair and congenial for producing tin. This remark will apply to the 172. Both of these levels are lately commenced driving, and are within 15 fms. of the point the south lode is cut at, in the 162; here the lode is worth 9*l.* per fathom. The winze sinking below the 150, 12 fms. before this end, is worth 16*l.* per fathom. The south lode is cut in the 150 cross-cut, where it is 2 ft. wide, yielding saving work. No. 1 stope in this back is worth 7*l.*; No. 2, 14*l.*; No. 3, 9*l.*; and No. 4, 4*l.* per fathom. The stope in the 140 is worth 7*l.* per fathom. The 135 is still driving in the country, the lode being hard for driving. No. 1 stope, in this level, is worth 8*l.* per fathom; No. 2, 4*l.*; and No. 3, 10*l.* per fathom. The 125 is now cleared to the old east shaft, which we are now going through, and hope to find the whole ground soon after this is got through. Our tribute department is rather limited, it being three men and two boys, at 12s. in 1*l.*

TREWEATHA.—T. Foote, J. Scoble, Dec. 12: Friday last being our setting-day, the following bargains and pitches were let:—The 50 north to four men, stented 3 fms., at 4*l.* per fm.; lode at present poor. The 50 south to four men, 3 fms. stent, at 4*l.* per fm.; lode 2 ft. wide, worth 4 cwts. of lead per fm.; we expect an improvement in this end every day, and found in forking out the water that a small run had taken place in the back of this level, close to the present end, and some splendid work for lead had washed out. We have set the rise and stope in the back of this level to six men, at 3*l.* per fm.; lode worth full 10 cwts. of lead per fm., a fine-looking lode. No. 1 stope, in the back of the 40 north, to four men, 8 fms. stent, at 1*l.* 15s. per fm.; lode worth 4 cwts. of lead per fm. The 40 south to drive by six men, 2 fms. stent, at 8*l.* per fm. We have cut through the lode in this end, which is 4 ft. wide, but poor. One stope in the back of this level to two men, 5 fathoms stent, at 1*l.* 15s. per fm., worth 4 cwts. of lead per fm. One stope in the 40 north to four men, at 22s. 6d. per fathom, stented 10 fms., worth 4 cwts. of lead per fm.; and one stope in the same level to four men, stented 5 fms., at 25s. per fm.; lode poor. We have suspended the 30 for the present, the lode being poor. One stope in the back of this level to four men, stent 8 fms., at 1*l.* 12s. 6d. per fm., worth 3 cwts. of lead per fm. One stope in the back of the 20 south to six men, stent 12 fms., at 1*l.* 15s. per fm.; lode worth 4 cwts. of lead per fm. One stope in the back of the 33, north of footway shaft, to four men, stented 8 fms., at 1*l.* 12s. 6d. per fm.; lode worth 3 cwts. of lead per fm.—South Mine: We have eight pitches working in the different levels, at 13*l.* per ton, the men paying all cost over 10s. per 100 kibbles for drawing the stuff, and are getting fair wages. To tram all the stuff at north mine in the 30 and 40 by two men, at 8*l.* per month for two months, and to find men to keep the stuff clear. To fill, land, and work the machine to four men, for two months, and do any other work that is required, at 14*l.* per month. Whim drawing at the south shaft at per 100 kibbles for two months. We sampled yesterday 28 tons of ore, for sale on the 18th inst.; the machinery is working well.

VIGRA AND CLOGAU.—W. J. Holman, Dec. 13: We shall clear upon Saturday, and remit the gold early in the next week. The lode in the driving west from No. 1 shaft, No. 2 mine, still holds on its size and quality, yielding rich stones of visible gold, and good stamps-work through the mass. Estimated value 80*l.* to 100*l.* per fathom. The No. 3 level east is also in a remarkably fine lode, and shows some visible gold; the driving has hardly yet entered the bearing ground; the lode is 8 ft. wide. The adit level east is progressing well; the lode is from 5 to 6 ft. wide, and improving in quality. At the Old Clogau Copper Mine the preparation of the ground for the incline-shaft is nearly completed. The lode south of the slide has not yet been cut. The stamps, and all other surface-work going on well.

WALKHAM AND POLDICE.—John Lean, Dec. 13: In the 50, driving south, the lode is very large and well defined, 6 ft. in width, composed of spar, mundic, and prian, interspersed with lead ore—a very promising lode; I have set to eight men to drive at 6*l.* per fm.; the water has somewhat decreased in quantity. In the 38 south the lode is large, and promising an improvement, producing good stones of lead and copper ore; I have set this level to drive by four men, at 5*l.* 5s. per fathom.

WEST BASSET.—Wm. Roberts, Dec. 12: Grenville's Shaft: In the 154 cross-cut north the lode has been intersected, on which we have commenced to drive both east and west; the lode is full 3 ft. wide, of a promising appearance, and is all saving work for copper ore. In the rise in back of the 144 the lode is 2 ft. wide, producing stones of ore. The lode in the 144 west is 1½ ft. wide, yielding stones of ore.—Middle Lode: In the 94 east the lode is 1 ft. wide, producing 1 ton of ore per fathom. In the 75, east of cross-cut, the lode is 2 ft. wide, producing malleable copper and yellow ore, worth about 1 ton per fm.; in the same level, west of cross-cut, the lode is 2 ft. wide, producing 1½ ton of ore per fm. The lode in the 65 east is 3 ft. wide, all dressing work for tin and copper ore. In the winze sinking below the 52, a few fathoms beyond the 65 end, the lode is 2 feet wide, worth about 8*l.* per fm. for tin.

WEST SHARP TOR.—William Richards, Dec. 11: Since the date of my report for the general meeting we have met with some rich black, grey, and yellow copper ore, mundic, &c., for 10 in. wide, in the 174 cross-cut, and there is some granite exposed in the back of the end. I think we are through the lode; a few days more will prove it. This part of the lode assumes a promising appearance, and should be opened on west as early as possible.

WEST ST. IVES.—Thomas Uren, Dec. 13: Since I wrote you last we have opened further on the lode, which still continues its large size, and yielding good stones of copper ore all through the lode. On the footwall there is a soft course of about 8 inches wide, which I consider very favourable for copper ore, and also a great advantage in breaking away the lode. From present appearances I have no doubt of raising a large quantity of mineral. We are piling our copper ore at the entrance of the adit level.

WEST WHEAL TOLGUS.—Dec. 12: The ground at Taylor's engine-shaft is hard and wet. In the 85 east the lode is 2 feet wide, producing 1 ton of ore per fathom. The lode in the 85 fathom level is 4 ft. wide, with a little more killas mixed up in the lode than formerly, now producing 4 tons of ore per im., worth 20*l.* per fm. In the 75 east the lode is 2 ft. wide, producing 1 ton of ore per fm. The lode in the 75 west is 3 ft. wide, producing stones of ore, and has a promising appearance. We have four stopes in back of the 75 and one stope in the bottom of this level, working by 30 men, at an average price of 3*l.* 11s. per fathom, and yielding 3 tons of ore per fm., worth from 10*l.* to 12*l.* per fathom each. In the 65 west the lode is 4 ft. wide, producing 1 ton per fm., and is a very promising looking lode. In the rise over the back of the 65 the lode is 18 in. wide, consisting of spar and flookan. The lode in the winze just commenced to sink under the 65 west is 3 ft. wide, yielding 3 tons of ore per fm., worth 12*l.* per fm. In the back of the 65 east we have two stopes working by twelve men, at 2*l.* 10s. per fathom. The eastern stope is yielding 4 tons of ore per fathom, and the western stope 3 tons per fm. The lode in the 50 fm. level west is 1 ft. wide, composed of flookan and spar.

WESTMINSTER.—F. Evans, Dec. 11: The water is out of the 70, which is being driven eastward in a lode worth 1 ton of lead ore per fathom, and likely shortly to become more productive. We are clearing the stuff in the bottom of Thompson's shaft, and shall as soon as possible fix penthouse preparatory to sinking below the 70. I am pleased to state that Thompson's engine-shaft is fast hastening towards completion, and that the end of this month will see it all but finished to receive pitwork. I beg to hand the cost-sheet for the month, having made it a five weeks, to provide for the alteration in the pay-day. Capt. Kitto was here to-day, and went through the accounts with me, and is satisfied everything is being carried out as economically as possible. The water is exceedingly strong, but trust we shall be able to keep it out for sinking Thompson's shaft below the 70, and also fix the pitwork in the same shaft; in about five or six weeks we shall want the latter, hoping by that time to fix permanent work, and to go on without any further hinderance to complete the same.

WHEAL AGAR.—William Roberts, Dec. 12: In the 140, west of cross-cut, the lode maintains its size—6 ft., and still produces good work for tin. The lode in the 140 east is 3 ft. wide, saving work for tin. In the 130 east the lode has improved; it is full 4 ft. wide, producing good stones of copper ore, and saving work for tin. In the 110, east of the western shaft, the lode is small, being apparently squeezed by the elvan course. The lode in the 90 east is 2½ ft. wide, producing low-quality tinstuff. No alteration in other points worthy of notice.

WHEAL BULLER.—J. Inch, Dec. 12: Stevens's shaft is worth for tin 12*l.* per fm. The 80 west is worth 25*l.* per fm. The 80 east is worth 35*l.* per fathom. The winze sinking under this level is down 7 ft., worth for tin 50*l.* per fathom. The 70 east is producing stamping work for tin.—Hocking's Shaft: The 80 east, on the north tin lode, is worth 5*l.* per fm. The 70 east is worth 6*l.* per fathom. The 70 west is producing stamping work for tin. The stopes and pitches throughout the mine are producing their usual quantities of tin.

WHEAL CREBOR.—J. Gifford, Dec. 11: In the 120, both east and west, we are still driving by the side of the lode, and ground favourable. In the 108 east we are driving by the side of the lode; ground favourable, and lode showing good stones of ore on the north wall. In the 96 cross-cut south the ground is much the same as last reported. In the 96 east the lode is 3 ft. wide, composed of capel, quartz, and mundic, with occasional stones of ore—a very promising lode. We have communicated the winze in the 96 east with the 108, which gives good ventilation, and have commenced sinking another winze in the same level, about 45 fathoms east of the latter, where there is a little ore gone down in the bottom of the level, with a loose and kindly lode. In the 84 east the lode is 2 ft. wide, yielding mundic and copper ore, although not enough to value—a very promising end. No other alteration in the mine to notice.

WHEAL EMMA.—T. Bennett, Dec. 13: The 30 fm. plunger-lift is fixed in the 104 fm. level, and completed to the 70; it works admirably. The shaftmen have resumed the sinking of the shaft, which is full 7 fms. below the 104. Good progress is being made in extending the 104 east on the flookan course, which is now full 41 fms. from shaft; it would have been several fathoms further but for the fixing of the plunger, &c., as during a portion of the time required for that work the pumping-wheel was stopped, consequently the water rose above the 104, and prevented the men from working there for upwards of a fortnight. No. 1 stopes, east of cross-cut, in the bottom of the 80, are worth 10*l.* per fathom. No. 2 stopes, west of cross-cut, in the bottom of the 80, are worth 20*l.* per fathom. No. 3 stopes, in the bottom of the 80, west of winze, are worth full 20*l.* per fm. We weighed off on Thursday, Nov. 29, 148 tons 8 cwts. of ore, which realised about 702*l.*, and we are progressing favourably in making provision for the forthcoming sampling, which I expect will be a little more, and of a little better quality.

WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Dec. 8: The lode in the 120, east of shaft, is 2 ft. wide, and producing some good tinny work; this lode is looking very promising. The lode in the rise above the 120 west is 3 ft. wide, and also producing tinny work. The lode in the stope above the 120 is worth 7*l.* per fm. The lode in the stopes above the 110 will average 5*l.* per fm. The lode in the stope below the 90 east is worth 10*l.* per fm. There is no change in the 90 cross-cut north since our last. The lode in the 80 west is 20 inches wide, of prian and quartz, worth 4*l.* per fm. The lode in the 66 east is 3 ft. wide, and worth for tin 7*l.* per fm. The lode in the boundary shaft is much the same as last reported.

— G. R. Odgers, W. Bennetts, Dec. 13: We have no change to report in any of our underground operations since our last advice, more than that the ground in the 90 fathom level cross-cut north has very much changed, and getting very wet; from these appearances it would lead anyone to think that we are approaching a lode.

WHEAL KITTY (St. Agnes).—S. Davey, Wm. Polkinghorne, Dec. 8: In the 82, driving west of Holgate's shaft, the lode is still producing saving work for stamps.—Pryor's Lode: In the new shaft, sinking below the 65, the lode is much the same as last reported, worth for tin 20*l.* per fm. In the 65, driving west of shaft, the lode is still worth for tin 25*l.* per fm. In the 65, east of shaft, the lode is poor. In the 54, driving west of shaft, the lode is poor. In the 54, driving east of shaft, the lode is worth for tin 8*l.* per fm., with a kindly appearance. We have met with the lode in the 44, west of the cross-course, but have not seen enough of it yet to give its value. In the 44, driving east of shaft, the lode is looking a little more promising, worth for tin 4*l.* per fm.—Wheal Vottle Lode: In the 44, driving east of cross-cut, the men are desuing the lode. In the 24, driving east of cross-cut, the lode is worth for tin 6*l.* per fathom; and in driving west also 6*l.* per fm.

WHEAL KITTY (Uny Lelant).—Wm. Rosewarne, Dec. 13: North Russoe Lode: We are making good progress in putting a tram-road in the 140, east of Bolitho's rise. The lode in the 130, west of Bolitho's rise, is opening tribute ground. The lode in the winze sinking below the 120, west of Bolitho's rise, is worth 3*l.* per fm.—Gowan Lode: The lode in the 80, east of Roger's shaft, is worth 8*l.* per fm.—North Gowan Lode: The lode in the 60, west of Roger's shaft, is producing a little tin. The lode in the rise above the 60, west of Roger's shaft, is worth 6*l.* per fm.—South Russoe Lode: The lode in the boundary shaft, sinking below the 10, is producing good stamping work for tin.

WHEAL MARY ANN.—Peter Clymo, J. Harris, J. Stevens, Dec. 11: Clymo's shaft is sunk 6½ fathoms under the 220; the cross-cut in this level is extended 14 fms. towards the lode. In the 210 north the lode is 2 ft. wide, worth 4*l.* per fathom. In the same level south it is 3 ft. wide, worth 14*l.* per fm. In the 200 north it is 2 ft. wide, worth 8*l.* per fathom. In the same level south it is 2½ ft. wide, worth 9*l.* per fm. In the 190 north it is 1½ ft. wide, worth 5*l.* per fathom. In the same level south it is 4 ft. wide, worth 15*l.* per fm. In the 180 north it is 2 ft. wide, worth 5*l.* per fathom. The stopes and pitches are producing much the same as usual.

WHEAL SPARNON.—W. Tregay, E. Chegwin, Dec. 3: Jardine's: The stope in back of the 60 west is worth 10*l.* per fm. The rise in back of the 20 east is still in hard elvan; lode improving in appearance, producing good stones of copper ore, and letting out much water.—Old Sump, North Lode: In the 45, driving west from the cross-course, the lode produces good stones of copper ore, and looks well for improvement on getting away from the cross-course—a large strong lode, and letting out more water.—Belfry's Shaft: In the 60 west the lode is looking well for an improvement, producing good stones of copper ore, letting out much water, and ground easy for driving. In the 45 east the south lode produces saving work for tin.—Cobalt Lode: In the rise in back of the 45 the lode produces cobalt bloom and occasional stones of that ore.

WHEAL TREVENNA.—T. Jennings, Oct. 13: We are making good progress in erecting our portable engine, putting down pitwork, &c. We hope to have the engine at work by the end of next week, when no time shall be lost in sinking our new engine-shaft to the 30 below the surface.

WHEAL UNY.—S. Coade, M. Rogers, Dec. 8: We have driven south through the lode at the 130, engine-shaft, 6 ft., and have put the men to drive west on the lode; the part driven through will produce 4 cwts. of black tin per 100 sacks. The lode in the 120, east of shaft, or part carrying, is 8 ft. wide, producing tinstuff of 4 cwts. of black tin per 100 sacks. The 110, east of shaft, is driven into the cross-course, and we shall open on it and ascertain its value next week. The 100 is driven east of Goodinge's cross-course 6 fms., and the lode or part carrying is producing tinstuff of 2 cwts. of black tin per 100 sacks. The 120, west of incline shaft, is driving by four men, at 7*l.* per fm., worth 7*l.* per fm. We have sold this day to Williams, Harvey, and Co., at Trethellan, 9 tons 9 cwts. 2 qrs. 10 lbs. of black tin, at 44*l.* 2s. 6d. per ton.

FOREIGN MINES.

ALAMILLOS.—Dec. 1: The 4th level, west of San Rafael shaft, is unproductive. In the 4th level, east of same shaft, the lode is small and the ground hard. We have commenced driving the 4th level west, and expect to hole to Lopez' winze this month. The 2d level, east of La Magdalena shaft, has opened a good length of productive ground, and is now worth 1¼ ton per fathom. The 3d level, east of Domingo's winze, has been in a good lode until this last few days, when it fell off. The 3d level west has undergone an unfavourable change this last fortnight. The 3d level, east of La Magdalena shaft, is poor. In the 3d level west the lode is large and strong, chiefly composed of carbonate of lime and lead, worth for the latter 2 tons per fathom. The 3d level, east of Taylor's shaft, will be holed to the one last named in the course of this month. The lode in the 4th level, east of same shaft, is large, and spotted with lead. In the 4th level west the lode has been open, and speedy for driving, worth 1 ton per fathom. In the 3d level, west of San Adriano shaft, the main slide is in the upper part of the level, consequently the lode is worthless. The lode in the 2d level, east of San Jose shaft, is of a kindly appearance, yielding good lumps of lead. The 2d level west is wet and troublesome for driving. In the 2d level cross-cut south we are expecting to intersect the main lode. The lode in the 2d level, east of Crosby's shaft, fluctuates considerably, but has opened a splendid run of ground in the past month. The 2d level west is unproductive, but an improvement is daily expected. At Taylor's shaft a plat and wheelbarrow road has been cut, and the sinking for a 5th level will be commenced in a few days. Crosby's shaft is being sunk for a 3d level, and the lode is gradually improving. San Enrique shaft is holed to the 3d level, and will immediately be made available for drawing stuff. San Adriano shaft is hard for sinking, and the underlie of the lode has carried it out of the shaft. San Francisco shaft is also off the lode, and the ground very hard for sinking. The tribute department is looking much as usual. The machinery is in very good working order, and the weather continues favourable for surface operations. We estimate the raisings for December at 150 tons.

FORTUNA.—Dec. 1: The 100, west of O'Shea's shaft, is hard and expensive for driving, and the lode small. In the 90, west of Henty's shaft, the lode is small, and the granite getting harder for driving, worth 1 ton per fathom. The lode in the 80 continues small, worth ¾ ton per fathom.—East of Engine-shaft: The lode in the 70, west of Kennedy's shaft, contains small stones of lead, but not enough to value. In the 70, east of Carro's shaft, the lode is small, but we expect an improvement, there being a good lode in the winze in advance of it. The 55 east has opened a good length of productive ground, but the lode is now diminishing in size, worth 1 ton per fathom. The lode in the 45, east of the same shaft, is very changeable; it is now opening good tribute ground, worth 2 tons per fathom. In Judd's shaft the men are making good progress, considering the hardness of the rock. Manhon's winze is unproductive. Utrera's winze is deep enough for the 45, and will be holed in a few days; lode worth 2 tons per fathom. The sinking of Fulgencio's winze is resumed, and it will soon reach the 70. Ballen winze is situate west of Judd's shaft, and in advance of the 80; lode worth 1½ ton per fathom. Nicholas winze is fixed east of Carro's shaft, and in advance of the 55.—South Lode: The 40, east of San Pedro shaft, continues to open moderately productive ground, worth 1¼ ton per fathom. In the 40, west of the same shaft, the lode is irregular, and contains good stones of ore. In the 30 west the lode is large, and contains good stones of lead. Caledonio's winze is being sunk in a very strong and promising lode, worth 1 ton per fathom. —Los Salido's Mine: The lode in the 100, west of engine-shaft, is getting more regular, and has a kindly appearance. The 90, west of the same shaft, is in a hard bar of ground between two cross-courses. In the 75, west of Buenos Amigos shaft, the lode has greatly improved, and is now opening good ground, worth 4 tons per fathom. The lode in the 65, west of San Carlos shaft, is small and compact, and the ground hard for driving. The 55, west of same shaft, is unproductive. The upper part of the 45, west of San Carlos shaft, has a very promising appearance, worth 1 ton per fathom. In the 100, east of engine-shaft, the lode is irregular, and contains stones of lead in the upper part of the end. The 90, east of San Gabriel shaft, is passing through a strong cross-course, which has cut off the lode. The lode in Cologan's shaft is small and unsettled, being near a cross-course. The 65, east of San Pablo's shaft, although not so productive as it was, is still opening good tribute ground, worth 1 ton per fathom. Good progress is being made in Cologan's shaft. Gerona's winze is down to the 75, and will be holed in a few days by the end reaching it; lode worth 2 tons per fathom. In Galvez winze the lode is failing in value, and the ground very wet for sinking. In Francisco's winze the lode is not so productive as it was, now worth 1½ ton per fathom. Candido's winze is going down in a rich lode, worth 3 tons per fathom.—General Remarks: The stopes throughout the mine continue to yield a fair average quantity of ore. The engines are in good order, and the surface work is going on regularly. We estimate the raisings for December at 450 tons.

LINARES.—Dec. 1: West of Engine-Shaft—South Lode: In the 110, west of engine-shaft, the lode is large and strong, containing good stones of lead, worth 1 ton per fathom. The 75, east of Warne's shaft, is suspended for the present, as the lode is cut off by a strong slide. In the 75, west of same shaft, the lode is large and strong, chiefly composed of quartz and lead, worth for the latter 1¼ ton per fathom. The 60, west of Crosby's shaft, is unproductive. In rising through the vugh in the 120, east of engine-shaft, we have holed to the 110, and are now stoping and widening the workings; the lode is very wide, with good stones of lead. The lode in the 95, east of Thorne's shaft, is worth 2 tons per fathom. In the 85, west of San Jose shaft, the lode is open and large, chiefly composed of soft granite, gossan, and lead, worth for the latter 1 ton per fathom. The cross-cut south is hard for driving. In Cabrera's winze the lode is large, and spotted with lead. In No. 147 winze the lode is getting very small, but being on the north lode, and near Taylor's shaft, we attach importance to it. No. 146 winze is in advance of the 95, and looks kindly for that level; lode worth 1½ ton per fathom.—General Remarks: There is no unusual change in the tribute department. We expect to get the new 30-in. whim-engine to work in a few days; the other engines are in good condition. We estimate the raisings for December (five weeks) at 300 tons.

VAL ANTIGORIA GOLD.—J. Mitchell, Dec. 7: Since my report of last week the lode in the 10 fm. level end, on No. 2 lode, has greatly improved, both in size and richness. I shall make a trial of this ore next week with the two large mills, when I expect the results to be over 1 oz. of gold per ton of ore. I am employing all the force I possibly can in this important part of the mine. The lode in the winze sinking under the 10, on No. 1, is 8 in. wide, of average ore. In the 20 fm. level end, driving south from main shaft, there is a very promising lode. The stopes are without alteration. This week we have been employed changing the beds of the two new mills, and shall be ready to work on Monday next.

VALLANZASCA GOLD.—Battigio, J. Roberts, Dec. 7: After a very careful examination throughout the mines, I am pleased to state that the stopes opened never bid so fair to be of long standing as they do at the present time. They are all in good working condition, and yielding large quantities of auriferous ores, the principal points yielding from 1½ to ½ oz. of gold per ton of ore. With our present prospects, and the many promising points ye unexplored before us, we see no reason to doubt of having a large supply of ore for many years to come. The crushing and the amalgamation of the ore is regular. We have 83,016 grammes of amalgam on hand. We intend smelting the amalgam in the course of a few days, the results of it will be found satisfactory.

By Telegram.—Dec. 9: The remittance of gold made to the office from the amalgam obtained during 58 days (full working days) is 370 ozs., of the approximate value of 1100*l.*

PESTARENA GOLD.—Pestarena, T. Warne, Dec. 6: We shall smelt the amalgam on hand to-day, and calculate it to yield over 600 ozs. of gold, which will, considering the delays that we have had the past two months, be satisfactory. The lode in the bottom of the Peschiera engine-shaft, sinking under the 71, continues to be very wide, yielding ore, worth 2 ozs. of gold per ton. The stopes being worked from the bottom level of this mine continue to yield 9 tons of ore per fm., worth 2 ozs. of gold per ton. The end of the bottom level in the Aquavite Mine is being pushed with all speed, expecting every day to reach the course of auriferous ores before this end, and on which we have commenced a stope from the level above, where the lode yields 8 tons of ore per fathom, worth 2 ozs. of gold per ton. The lode in the stope in the back of the bottom level is 4 ft. wide, yielding 8 tons of ore per fm., worth 1½ oz. of gold per ton. I am pleased to say that the weather has since our last been more favourable for our amalgamating department, hoping that it will continue, both for the amalgamating of the ore and surface improvements under construction.

By Telegram.—December 9: The remittance of gold made to the office for the amalgam obtained (during 53 full working days) amounts to 655 ozs., of the value of about 212*l.*

VAL TOPPA GOLD.—W. Jenkin, Piedimulera, Dec. 7: At the mine we are happy to report a further improvement. We have commenced to open a new stope in the back of Fisher's level, where the lode is 8 ft. wide, yielding ore worth fully 1 oz. 5 dwts. of gold per ton. The lode in No. 3 stope, in the back of this level, continues to be 12 ft. wide, yielding rich ore. At the Marmo Rosso level large quantities of rich ore ground are being opened, and the ore from the end and back of this level continues to be very productive for gold. The machinery and the ten large mills now at work at the establishment are working well, and the weather continues fine. The ore being brought to the establishment for the ten mills is daily accumulating on the floors behind the machine-house, where there are now over 500 tons, affording a supply for our mills in case we should be hindered from bringing down during the winter months. Although the stream of water in the Marmazza has been small during the past two months, and but a small number of the native mills at work, we have made over 38 kilos of amalgam, which will be smelted and remitted to the office in the course of a day or two. The construction of the additional 10 large mills is progressing, and we expect to have them fully at work early in the coming spring, when our returns of gold will again considerably increase.—By Telegram, Dec. 9: The remittance of gold made to the office from the amalgam obtained during 52 full working days is 332 ozs., of the approximate value of 1162*l.*

NEW WILDBERG.—J. Sanders, Dec. 8: Carter's Shaft: The water was forked and the driving of the 90 east resumed on Wednesday evening; the lode is yielding spots of copper and lead ore. The rise above the level is unproductive. The 80, west of Davey's stopes, is worth 15 centners of ore per lachter; the stopes above the level 1½ ton per lachter; the steelstone cross-cut is yielding ore occasionally; and the drivage west towards the steelstone cross-cut is yielding a little ore, but not to value. The 70 west, under the Erbteilfstergang, is being driven by four men; the lode in this part is very wide. The part being carried in the drivage is yielding good stones of ore, and we expect it will shortly improve. In the drivage at the 50, on the Johannes Trum, the lode is 2 ft. wide, with a slight mixture of ore, and is likely to improve. The tributers working below the 60, on the Dornergang, have now a good lode of ore, worth 1½ ton per lachter, but, being by the side of the old workings, we cannot at present depend upon its continuance.—Michael's Shaft: The lode in the 70 west is of a very promising character, and a little ore has been found in it this week. This level is extended 26 lachters from the shaft, and is nearly under the workings above the 50, where large quantities of ore have been raised by former parties; an improvement may, therefore, be expected.—Beck's Workings: In consequence of the quantity of water coming from surface through the old workings we have been obliged to re-timber part of the winze from the 60 to the 70 lachter level, which has hindered us from working at the latter place during the week. In a day or two all will be secured.

WEST CANADA.—Capt. Plummer, Nov. 17: Huron Copper Bay: The 30 has been holed to the winze coming down to this level from the 20, and the stopes are started with six men on the west and three men on the east stope; the lode at this point is not very good, and has not turned out so well as we expected it would do; it yields about 1½ ton per fm. The stope on the west of the new shaft yields 2½ tons.—Palmer's Shaft: Good progress is being made in sinking, but the lode of late has considerably lessened in width; it now yields about 2½ tons per fm. The stope west is worth 3 tons, and that on the east 4 tons.—Bray's Shaft: The 50 metre level east is large, but not quite so good, and the same may be said of the end over the west of the shaft; they yield from 1½ to 2 tons per fm.—Wellington: Grenfell's shaft is being sunk with dispatch, but no improvement in the lode, which yields 1¼ ton per fm. The stope on the west is of similar character. The stope west of Rowe's winze, west of Crase's, yields 1½, and on the east of ditto 2 tons. The 24, east of Mitchell's, yields 1½, and the 36, east of the same shaft, 2 tons. The stope is not very good, but improves as we get deeper. The stopes on the east and west of Rowe's yield 2 tons per fm., and we are led to hope for an improvement.—Fire Lode—Colling's Shaft: The lode has lessened in value, being about the depth of the barren floor before spoken of, which seems to have greater influence on this than on the new lode, possibly from the fact of its not being so strong and wide. The stopes east and west of Crebo's winze are without change.—Bruce Mines: The stope east of Trial's shaft yields 2 tons per fathom, but that on the west is poor, and not worth more than 1 ton per fm. The stopes at the engine-shaft yield 1¼ ton per fm., and are speedy for cutting. The stope at Scott's is worth 1¼, and at Doidge's 1½ ton per fm. The 50, east of Ferrier's shaft, is slightly improved, but cannot be reckoned of any value. This plan is not coming up to our expectations; concerning it, Taylor's shaft (new) is down nearly 2 fms.; the lode is from 7 to 8 ft. wide, and yielding about 1½ ton per fathom, and no change in it since my last report. The weather of late has been unfavourable for surface work, being exceedingly wet and cold; we have, however, erected the small engine, and fixed the boiler, and hope shortly to have it working.

NEW GOLD WORKING MACHINE.

The machine now being used on the Mariposo estate is known as the "Lundgren Pulveriser. It takes its name from the inventor, a Swede, who has patented it in Sweden, France, England, and the United States. The original object of the machine was to reduce all hard substances known and used in the arts which required to be reduced to a palpable powder. It is found in the course of experiments that it was capable of reducing the hardest kind of rock finer, more expeditiously, and with less motive power than by any method of wet crushing yet known. Its construction is simple, being merely an iron cylinder, of the proper size, suspended and revolving on a shaft through its centre. It is loaded with the proper proportions of chilled iron balls, of about an ounce weight, and quartz rock; the rock having been previously partially reduced by rollers, or any convenient crusher. The cylinder, whilst pulverising, is air-tight. The usual time of reducing a charge is one hour, which includes the time of loading and discharging. The amount of a charge is in proportion to the size of the machine.—*San Francisco Mining and Scientific Press.*

IMPROVED STAMPS.—The invention of Messrs. H. DART and Co., of New York, U.S., consists in the arrangement of a revolving pulley, provided with flanges (part cut away to form a nose), which during the revolution of the pulley take hold of a cross bar connected by means of a bolt or chain with the stamp-rod, and thereby lift the stamper, in combination with a fixed cam or frame whereby the cross bar is pushed away and brought clear of the nose in the flanges, to allow the stamper to fall again by its own weight, and producing thereby the alternate lifting and dropping of the stamper. By this arrangement the stamper is always lifted and falls in a perpendicular line, without any friction on the bearings, giving full force and effect to the blow. Also, the belt or chain can be lengthened or shortened as desired, to increase the force of the blow

or make up the loss for the wearing away of the steel or weight. By means of a very simple contrivance the stamper is caused to turn round one-third of the way at each rising of the stamper, thus producing a new striking surface at each blow. By another simple contrivance it is arranged to hold up each or any number of stampers without stopping the rest of the mill.

INEXPLOSIVE BLASTING-POWDER.

It is scarcely possible to conceive any material which the practical miner would be less likely to consider worthy of his countenance than "Inexplosive Blasting-Powder," could it be assumed that the designation was to be taken in its generally accepted sense; for, if a misfire be an annoyance, how much greater must be the vexation occasioned by the use of a powder the sole recommendation of which is that it is inexplosive altogether. In the choice of such a name, however, for the new powder discovered by Mr. G. A. NEUMEYER, and to which reference has already been made in the *Mining Journal*, a considerable limitation is intended—the fact being that the powder is inexplosive only when it is desirable that it should be so, but even more powerful than the best ordinary powder when it is in actual use for the purposes to which gunpowder is usually applied. Thrown in a heap upon the ground the new powder may be ignited with impunity; but, loaded into a gun, or tamped into a blast-hole, its projective and rending powers respectively are of the most satisfactory character.

Unlike many of the new powders and blasting materials which have from time to time been proposed, Mr. Neumeyer's powder contains only the ordinary ingredients of gunpowder—saltpetre, sulphur, and carbon—its superiority being due solely to the greater skill and judgment displayed in its manufacture. Compared with ordinary powder, the "inexplosive powder," it appears, possesses many advantages in addition to that of not exploding whilst in contact with the atmosphere; it leaves less residuum, less smoke (and the little left is light, easily dispersed, and quite inoffensive), and is cheaper than ordinary powder; it requires no polishing, yet does not attract more moisture than ordinary powder that has been carefully polished with black lead, and loses none of its explosive qualities even if completely saturated, drying at once restoring it to its normal state. No danger whatever attends its manufacture, and it may be handled, removed, and transported with the greatest safety, whilst the explosion of magazines, whether ashore or afloat, can be rendered almost impossible, by simply providing air-ways from the atmosphere to the powder.

Comparative experiments are to be made at the Crystal Palace this (Saturday) afternoon, when Mr. Neumeyer will attend to give every necessary information, but as the merits of the new powder have already been thoroughly tested on the Continent, it may not be uninteresting to give the results obtained. The weapons used were in Prussia the needle-gun and in France the regulation infantry gun, the results being measured by the balistic pendulum. In the first experiments 76 grains of "inexplosive powder" gave a velocity of 1520 feet per second, whilst 79 grains of ordinary powder gave but 1504 feet per second. In some other experiments at Paris with different weapons the results were (107 grains of powder being used in each case) 1460 feet per second with the "inexplosive powder" and 1358 feet per second with the ordinary powder. In an experiment for proving the relative absorption of moisture, it was found that in ten days French powder increased 0·90 per cent.; "inexplosive powder," polished, 1·03 per cent.; and "inexplosive powder," unpolished, 0·66 per cent., thus proving that the non-polishing of this powder renders it less sensible to moisture.

But the experiments of the greatest interest to miners are those made on the Place du Roi de Rome, at Paris, in September last, since they prove one very important fact. Two holes were charged with the respective powders, each with 21 ozs., and left unclosed. Upon being ignited the ordinary French powder quickly exploded, whilst the new powder burnt itself out without explosion, owing to the air being in contact with it: so that if, during the charging of the hole, the powder became accidentally ignited the workmen would not be injured. Yet as to the destructive power of the new powder when in actual use, it yields nothing to the ordinary blasting-powder. It was found by experiment that about 7 ozs. of the inexplosive powder in a hole 24 in. deep and 1⅛ in. diameter, ignited by an ordinary Bickford's fuse, removed about 7½ tons of stone. The details of to-day's experiments at the Crystal Palace will be given in next week's *Mining Journal*.

CALDBECK FELLS CONSOLIDATED SILVER-LEAD AND COPPER MINING COMPANY.—At the adjourned general meeting of shareholders, at Wigton, on Wednesday (Sir Robert Briscoe, Bart., in the chair), the report of the committee of investigation was adopted, and it was agreed that the registered offices of the company should be in Cumberland. Mr. H. L. Phillips and the London shareholders represented personally and by proxies more than 13,000 shares, and the local directors between 11,000 and 12,000. A proportion of the former, not having been registered three months, were not entitled to vote, and hence the result. It is satisfactory to find that the mine is opening out most promising, and it is to be hoped that it will be so managed as to ensure the results that may now be fairly anticipated.

THE GREAT DARREN MINE.—It requires a considerable time to open, drain, and ventilate ancient mine works of great extent, and sometimes people become impatient just when it is the proper moment to use perseverance. We are glad to find, at any rate, that the eastern ore ground has again been set in order for taking away a section of 30 fms. long by 10 fms. deep. This 300 fms. of ground, worth about 20*l.* per fm., or 6000*l.*, is the back of the bottom, or 30 fathom level, from the engine-shaft, and no doubt will leave about one-third of it, or 2000*l.* profit. When it is considered that this is from a very small portion of the mine, it affords encouragement to use energy in carrying out the design to its full extent, that has been so successfully commenced and so properly conducted up to this point.

GOLD MINING IN ITALY.—It cannot fail to be encouraging to those interested in the development of the Italian gold mines to find that the returns continue to gradually increase. Another remittance from the Pestarena, Vallanzasca, and Val Toppa Mines has been received, amounting to about 1357 ozs. of fine gold, of the value of something like 4400*l.* The yield per ton of the Pestarena ore treated during 52 days has again been over 2 ozs. of gold per ton of ore. That mine has now returned since April 1 over 9000*l.* worth of gold.

THE NEW QUEBRADA COMPANY.—It is satisfactory to learn that this enterprise has been successfully reconstructed, and upon a basis that will ensure the completion of the railway, and the development of the teeming resources of the property—it now comprises about a quarter of a million of acres, in addition to the mines. The mode of reconstruction adopted has been by giving three new 5*l.* shares for every one 10*l.* share in the old company. Each new share having 3*l.* 6s. 8d. credited as paid, leaves 1*l.* 13s. 4d. to be called up. This will provide a capital of 81,000*l.*, but, in addition, there are 21,000 new shares to be offered to the public when the directors shall deem such a course expedient. It is computed that the 81,000*l.* to be called up on the A shares will be more than sufficient to complete the first section of the railway, by which such results will be shown as will, it is thought, at once command for the unissued capital a substantial premium. But this additional capital will not be required if it is not determined to have railway communication close up to the mines. Mr. E. Mathews, C.E., the engineer, who has just returned from Venezuela, reports nine miles of the railway to be well constructed, in good working order, and equal not only to the mineral traffic, but also fully capable of accommodating the general traffic which is sure to arise from the San Felipe district—the centre of the cultivated portion of the territory. Advantageous offers have already been made to the company for the bringing down of the crops, &c., the acceptance of which will, it is estimated, produce a large revenue. Mr. Mathews has brought to this country a collection of hard woods and valuable drugs of various kinds, which are produced upon the estate to any extent. It may also be mentioned that a native silver mine has been discovered upon the company's estate, with reference to which Captain Prince, in his last letter, states that he was about to make a full investigation, and would report the result in due course. As to the production of copper, Capt. Prince affirms that the quantity will be regulated entirely by the means at his command.

*** With last week's Journal a SUPPLEMENTAL SHEET was given, in which the Lectures on Mining, by Prof. Warington Smyth, at the Royal School of Mines, are continued; the Institution of Civil Engineers; Mr. James Robertson's paper on the Development of the Iron Trade, read at the London Association of Foremen Engineers' meeting; Factory Smoke and House Smoke; Coal in India; Coal in Labuan; the Principles of the Cost-book System Practically Considered, by Thomas Tapping, Esq.; Manufacture of Gun-cotton; Improvements in Pulverising Ores; Nitro-Glycerine; Peat as a Smelting Fuel; Treating Slag, &c.

*** With the Journal of Dec. 1 a SUPPLEMENTAL SHEET was given, in which appeared—Papers on Gas Lighting, on the Rail and at Sea; Coal Statistics *v.* Coal Strikes; Luteoline; Sodium Amalgamation; Algeria—No. III.; Mining in Ireland—No. III.; Caldbeck Fells Mines; Slate, and Slate Quarries; Extensive Ironworks in Austria; Hints to Emigrants—No. VII.; Artificial Tannin from Coal; Silesian Reverberatory Furnace; Steam Turbines; Compressed Air applied to the Working of Mines, &c.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, DEC. 14, 1866.

COPPER.	£	s.	d.
Best selected.....per ton	84	0	0
Tough cake and tile ,,	81	0	0
Sheathing and sheets ,,	86	0	0
Bolts ..... ,,	88	0	0
Bottoms..... ,,	91	0	0
Old (Exchange) .... ,,	72	0	0
Burra Burra ..... ,,	82	0	0
Wire.....per lb.	0	1	0
Tubes ..... ,,	0	0	11½

BRASS.	Per lb.
Sheets .....per lb.	9¾d.– —
Wire ..... ,,	8½d.– —
Tubes..... ,,	10¾d.– —
Yellow Metal Sheath.p. lb.	8d.– —
Sheets ..... ,,	8d.– —

SPELTER.	Per ton.		
Foreign on the spot.....	21	15	0
,, to arrive .. £21 15 0–	22	5	0

ZINC.			
In sheets	28	0	0

TIN.			
English blocks	85	0	0
Do., bars (in barrels)	86	0	0
Do., refined.....	88	0	0
Banca	85	0	0
Straits £82 10 0–	83	0	0

TIN-PLATES.*	Per box.					
IC Charcoal, 1st qua.	1	14	0–	—		
IX Ditto, 1st quality	2	0	0–	—		
IC Ditto, 2d quality..	1	10	0–	—		
IX Ditto, 2d quality..	1	16	0–	—		
IC Coke.....	1	4	0–	1	6	0
IX Ditto	1	10	0–	1	12	0
Canada plates, p. ton..	13	10	0–	—		
Ditto, at works	12	10	0–	—		

* At the works, 1s. to 1s. 6d. per box less.

IRON.	Per ton.					
Bars Welsh, in London	7	0	0–	7	2	6
Ditto, to arrive	7	0	0–	—		
Nail rods	7	10	0–	9	5	0
,, Staffd. in London	8	7	6–	8	17	6
Bars ditto	8	5	0–10	0	0	
Hoops ditto	9	5	0–10	0	0	
Sheets, single.....10	0	0–11	0	0		
Pig No. 1, in Wales ..	4	5	0–	4	10	0
Refined metal, ditto..	4	0	0–	5	0	0
Bars, common ditto..	5	15	0–	6	0	0
Do. mrch. Tyne or Tees	7	10	0–	—		
Do., railway, in Wales	5	10	0–	—		
Do., Swed. in London.	10	2	6–10	10	0	
To arrive 10	10	0–	—			
Pig, No. 1, in Clyde ..	2	15	0–	3	6	0
Do. f.o.b. Tyne or Tees	2	9	6–	—		
Do. Nos. 3, 4, f.o.b. do.	2	6	6–	2	7	0
Railway chairs	5	10	0–	5	15	0
,, spikes 11	0	0–12	0	0		
Indian Charcoal Pigs, in London p. ton..	7	0	0–	7	10	0

STEEL.	Per ton.					
Swed., in kegs (rolled)..14	0	0–14	10	0		
,, (hammered)..16	0	0–16	10	0		
Ditto, in faggots 16	10	0–17	10	0		
English, spring 19	0	0–23	0	0		
QUICKSILVER (p. bottle)	6	18	0–	7	0	0

LEAD.	Per ton.					
English Pig, com. 20	0	0–	—			
Ditto, ordinary soft..20	5	0–20	10	0		
Ditto (WB) 22	15	0–	—			
Ditto, sheet.....21	0	0–	—			
Ditto, red lead 21	10	0–	—			
Ditto, white 27	0	0–30	0	0		
Ditto, patent shot....23	0	0–	—			
Spanish.....19	10	0–19	15	0		

REMARKS.—In the Metal Market there is, upon the whole, a somewhat better feeling now manifested than there was last week, and although business still continues very dull and spiritless, yet there has been a somewhat larger amount done than has been the case lately. Prices in the cases of some metals have become decidedly firmer, and prospects are rather more cheering than they were a short time since. There seems now good ground to hope that with the commencement of the new year we may see a decidedly better state of things arising in the metal trade, and that as confidence becomes again fully restored we shall gradually return to our usually active condition. It is very desirable that the position at present held by the metal market should pass away as speedily as possible, as it has now continued for an unusually long period, during which operations have been most contracted, and that we should again see transactions both of a legitimate and speculative character entered into freely, and the market once more assume that position of animation and vigour which formerly characterised it. Orders from America are still coming in very fairly; but from India they still continue exceedingly limited, and are, indeed, very small in comparison with the very extensive business formerly done with the East. We trust, however, that in time we shall see a revival there also, and that again we shall have a return of the former satisfactory state of our commercial relations.

COPPER.—During the week the market for this metal has been decidedly firmer, and a considerable amount of business has been done; manufactured has been sold at 85*l.*, being only 1*l.* under the official quotation. Both Burra and Wallaroo have been sold at 83*l.*, and Chili slabs at 76*l.* Altogether the prospects of the market are encouraging.

IRON.—In Staffordshire there is a steady flow of small orders, which are pressed for completion, proving that stocks are very low; usually very few are sent in the last month of the year. The works are, however, not going for more than three or four days a week, and the trade is decidedly dull. The question of reducing prices is again mooted. As the men in the North of England have at length submitted to the reduction of wages, and the masters in South Wales have given notice of a similar reduction, there is a feeling that the wages question need not prevent lowering the price of iron, should it seem desirable as a means of stimulating the demand. In Welsh no change of any importance has taken place. On home account a few orders have been placed for immediate delivery, a rather significant fact that consumers have no stocks on hand. The larger establishments are fairly employed, considering the depressed state of trade, but they are chiefly engaged on common descriptions of manufactured iron. There is a falling off in the demand for bars and rails at some of the works, while for plates there has been a slight change for the better. Some of the most sanguine in the trade believe, as confidence is now being gradually restored, and requirements are great, that after Christmas business will become more active; but the general impression is that no material improvement will take place before the commencement of spring. The American enquiry is tolerably good, and is likely to be so up to the end of the year, at which time also it is hoped several good orders will be placed for the Canadian, Baltic, and Indian markets. Trade on foreign account remains the same. In Swedish iron there is rather more enquiry. In Scotch pig-iron the market has continued to improve, and a fair amount of business has been done. The last price received from Glasgow was 54s. 6d. cash.

LEAD.—There is a very good demand continuing from America, and a fair amount of business has been done. Prices remain without alteration.

TIN.—A considerable improvement has taken place in foreign, and Straits have been sold at 82*l.*, and more recently at 82*l.* 10s. cash, and 83*l.* prompt on January 1; and for arrival, a parcel close at hand has been also sold at 83*l.* Business to a fair extent has been done in Banca at 83*l.*, but it is now held for 85*l.* Altogether, the market looks very satisfactory.

SPELTER is not quite so firm as it was last week, business on the spot having been done at 21*l.* 15s.; 100 tons have, however, been sold for January and February delivery at 22*l.* 5s.

TIN-PLATES still continue in fair demand.

STEEL and QUICKSILVER require no special remark.

BIRMINGHAM, DEC. 14.—Rylands' "Iron Trade Circular" says—Iron trade dull: it is understood that ironmasters will reduce bars 20s. next preliminary meeting. Reduction in iron and coal wages consequent.

THE COPPER TRADE.—Messrs. Vivian and Younger (Dec. 14) write—The week opened with stronger buyers than we have had for some time, and prices advanced more or less for all descriptions, the principal rise being in Chili bars, which jumped from 73*l.* on the spot to 75*l.*, and in one instance 76*l.* was paid for arrival. In fine copper the business done has been almost retail, and the advance nominal. In manufactured there is almost an entire absence of demand, except for the actual requirements of small consumers. Prices have been most irregular, and at the close there is more quietness in the open market, and buyers are more content to wait. The Birmingham houses have been buying pretty freely for forward delivery from the smelters. The immediate position and prospect of the market depend almost entirely on the advices received by the mail from Chili now due.

The MINING SHARE MARKET not only continues dull and depressed but there is very little new or important to report upon in connection with mining itself. Indeed, it may be said that, whereas the long-continued depression in the market for shares is almost unprecedented, so also we can scarcely remember a time when there have been so few discoveries or marked improvements in mines. The standard for copper ores is up again this week, and we hear that both copper and tin are firmer. The shares mostly dealt in since our last have been Prince of Wales, North Crofty, East Basset, East Grenville, Grenville, Wheal Crebor, Marke Valley, West Chiverton, Wheal Chiverton, Chiverton Moor, Chontales, North Treskerby, Wheal Agar, West Caradon, and a few others; but the largest transactions have been in Prince of Wales, shares in which leave off 23s. to 25s.; the 45 east is worth 20*l.* per fathom; west, 10*l.* per fathom; the winze from the 30 has been holed to the rise from the 45, and two stopes set at 2*l.* 10s. per fathom; the lode in each stope is worth 20*l.* per fathom. North Crofty shares have been largely dealt in, and have fluctuated between 2⅞ and 3¼, leaving off 2⅞ to 3. Chontales Gold, 2⅞ to 2⅝; the packet by which remittances of gold are expected is now overdue. West Seton, 110 to 120; at the meeting, held on Tuesday, a dividend of 2*l.* 10s. per share was declared. The accounts showed a profit of 1097*l.* 5s. 5d. on two months, and a balance in hand of 322*l.* 4s. 9d., after payment of dividend. The copper ores sold, and to come to credit of next account, realised 5066*l.* 6s. 3d.—rather less than the amount credited in the present statement. The mine has yielded its usual quantity of copper ores, and the reduction in profits is owing to the low price. If, in fact, the price of copper during the last six months had been equal to that of the year 1865, the dividend would have been 6*l.* instead of 2*l.* 10s. Wheal Seton, 127¼ to 132½, ex dividend of 4*l.* per share declared at the meeting. Clifford Amalgamated, 5¼ to 6; Drake Walls, 7s. 6d. to 10s.; East Basset, 20 to 22, and a fair business done; East Caradon, 4½ to 4¾; East Carn Brea, 2 to 2¼; East Lovell, 9 to 9½.

Wheal Buller, 18 to 20; Stevens's shaft is worth 12*l.* per fathom; the 80 west, 25*l.* per fathom; and the 80 east, 35*l.* per fathom. The winze sinking under the 80 is worth 50*l.* per fathom. East Russell, 2½ to 2⅝; Great Laxey, 17 to 18; Great Retallack, 7s. to 9s.; Great South Tolgus, 5s. to 10s.; Marke Valley, 3¾ to 4; Carnarvon Consols, 4¾ to 5; North Treskerby, 2⅜ to 2⅝; Prosper United, 2 to 2¼; Providence Mines, 20 to 22. East Grenville, 1⅞ to 2; the elvan which cut out the ore in the 95 west is wearing away, and the lode looks like coming into a course of ore again. The winze below the 85 is worth 4¼ tons of ore per fathom. South Condurrow, 11s. to 13s; South Grenville, 5s. to 7s. 6d.; West Caradon, 13 to 14. West Chiverton, 54 to 55; we understand the mine is looking better in the 80 and 100 fm. levels. West Frances, 9 to 10; Wheal Chiverton, 6¾ to 7¼.; Chiverton Moor, 4½ to 5; Wheal Grenville, 22s. 6d. to 25s. Wheal Mary Ann, 11 to 13, ex dividend of 10s. per share declared at the meeting. Wheal Agar shares have been largely dealt in, and leave off 27s. 6d. to 32s. 6d. Great Wheal Vor, 14½ to 15½; the accounts to be presented to the meeting of shareholders on the 19th have been published, and show a balance in hand of 3488*l.* 1s. 6d. The profit on the quarter was 3070*l.* 18s. 8d. The tin sold amounted to 210 tons 16 cwts., and realised 10,718*l.* 2s. 4d.

The market for mine shares on the Stock Exchange during the week has been dull. West Chiverton shares, on market operations, are quoted lower—54 to 56. The mine is looking better that at any former period. At present price, shares pay 15 per cent. per annum, with every prospect of increasing. Great Laxey and Great Vor shares are also lower, and very little business has been transacted in the week in English mines. Foreign mines have also been dull of sale. St. John del Rey, 47 to 49 ex div.; Pestarena, ¼ dis. to ⅛ prem.; Port Phillip, 15-16ths to 1 1-16th; Cobre, 1½ to 2; North Crofty, 2⅞ to 3; Westminster Lead (Limited), 5 to 5¼. The changes in prices otherwise are unimportant.

IRISH MINE SHARE MARKET.—We are glad to have it in our power to record a steady improvement in our Mining Share Market since last week. Any improvement, however small, and although almost exceptionally accorded to a favorite class of securities, especially at the close of a year, when most men of business are bent upon limiting, instead of extending, their transactions, augurs well for the coming year. In our case we have reason to be particularly pleased that such good omens have at length set in, for they are proofs of returning or increasing confidence in the vigilance and power of our Government to put down insipient rebellion, which if successfully launched would ruin our country for many generations, so far at least as it would affect our hopes of obtaining the support of English capital and English energy for the development of our mineral resources, which when properly selected, and scientifically and honestly conducted, offer one of the safest channels for profitable investments.

Actuated by such considerations, and attracted by the low prices which recently ruled, buyers have much increased, and, as a natural consequence, Mining Company of Ireland shares, which a few days since scarcely commanded 16*l.* 15s., have gradually risen to 17*l.* 12s. 6d. for cash (7*l.* paid), leaving off firm. Connorrees, which were down as low as 8s., have been done at 11s. and 11s. 6d. for cash, and at 12s. for a next month's and also for three months' delivery. Wicklow Coppers (2*l.* 10s. paid) have been taken at 22*l.* 17s. 6d. Other shares have been neglected for the above.

At Redruth Ticketing, on Thursday, 1977 tons of ore were sold, realising 7836*l.* 18s. 6d. The particulars of the sale were:—Average standard, 102*l.* 19s.; average produce, 6½; average price per ton, 3*l.* 19s.; quantity of fine copper, 128 tons 19 cwts. The following are the particulars of the sales during the past month:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
Nov. 8....	1370	£104 8 0	6⅝	£3 12 0	11s. 7½d....	£58 1 0
,, 22....	3884	104 19 0	6⅞	3 17 6	12 3	61 5 0
,, 29....	2041	95 9 0	7⅛	4 15 0	12 1	60 8 0
Dec. 6....	3440	101 3 0	6½	3 17 0	11 10	59 0 0
,, 13....	1977	102 19 0	6½	3 19 0	12 2	60 15 0

Compared with last week's sale, the advance has been been in the standard 1*l.* 12s., and in the price per ton of ore about 2s. 6d. Compared with the corresponding sale of last month, the advance has been in the standard 1*l.* 10s., and in the price per ton of ore about 2s.

The DYLAIS COAL AND IRON COMPANY, with a capital of 60,000*l.*, in shares of 10*l.* each, has been incorporated for the purpose of working a coal and ironstone property 1000 acres in extent, and situated at the head of the Dylais Valley. The whole property is in a ring fence, and comprises the Onllwyn, Rhydffosddu, Cefn-yr-Erw, Castell Coch, and other estates. The Onllwyn consists of nearly 700 acres, and contains the Upper Four-feet, the Eighteen-feet, the Nine-feet, the Lower Four-feet, and other veins, making a total workable thickness of between 30 and 40 ft. The argillaceous ironstones belonging to the north outcrop of the South Wales Mineral Basin. All the seams of coal and ironstone are proved; the coal is a pure anthracite, and is admirably adapted for smelting iron, for malting, lime burning, hop drying, and heating stoves: and for steam generating purposes anthracite is unrivalled. The property has been carefully inspected and reported upon by several of our most distinguished colliery engineers, and they concur in expressing a favourable opinion of it. Mr. S. H. Blackwell states that the calculation of profit, as given in the prospectus, upon the manufacture of pig-iron (2625*l.* per annum, with a make of 140 tons per week—the present capacity of furnaces), is a very moderate one, and may be fully depended upon if the furnaces are adapted to the recent improvements so successfully introduced in anthracite blast-furnaces. Mr. G. C. Greenwell concludes an elaborate report by observing—"I am satisfied that with proper management the Dylais Company's Colliery and Ironworks cannot fail to be a profitable investment." These views are confirmed by Messrs. E. Bagot, G. H. Bond, and W. Thomas, jun. The latter surveyor estimates the contents available to be—coal 21,000,000 tons, and ironstone 15,000,000 tons. The purchase money is fixed at 31,500*l.*, payable one-third cash, one-third shares half paid-up, and one-third debentures. The profits are estimated at

25 per cent., without taking into account the income from rents and other similar sources. The prospectus will be found in another column.

At Wheal Seton meeting, on Monday, a dividend of 1584*l.* (4*l.* per share) was declared.

At West Wheal Seton meeting, on Tuesday, the accounts showed a profit upon the two months' operations of 1697*l.* 5*s.* 5*d.* The credit balance amounted to 1322*l.* 4*s.* 9*d.* A dividend of 1000*l.* (2*l.* 10*s.* per share) was declared, leaving 322*l.* 4*s.* 9*d.* to be carried forward to the next accont. The amount of copper ores sold to come to the credit of the next account is 5066*l.* 6*s.* 3*d.*

At Dolcoath Mine meeting, on Monday, the accounts showed a profit upon the two months' operations of 742*l.* 17*s.* The credit balance amounted to 945*l.* 12*s.* 2*d.* A dividend of 716*l.* (2*l.* per share) was declared, leaving 229*l.* 12*s.* 2*d.* to be carried forward to the next account. Capt. Charles Thomas said that the mine could give as good a profit now, with tin at 60*l.* per ton, as it could some years since with tin at 75*l.* per ton.

At Wheal Mary Ann meeting, on Tuesday, the accounts showed a credit balance of 1870*l.* 6*s.* 9*d.* The profit on the working for three months ending September was 596*l.* 14*s.* 7*d.*; a dividend of 512*l.* (10*s.* per share) was declared, and the balance carried forward. [The agent's report is among the Mining Correspondence.]

At the Great Laxey Mining Company (Limited) board meeting, held at Douglas, Isle of Man, on Monday, the directors declared the usual quarterly dividend of 10*s.* per share, on 15,000 shares, payable in 14 days: amount, 7500*l.*

At the Devon and Cornwall United Mines meeting, on Dec. 4, the account of receipts and expenditure showed a debit balance of 1364*l.* 1*s.* 3*d.*; and the account of liabilities and assets showed a balance of liabilities over assets of 967*l.* 0*s.* 8*d.* Number of hands employed, 126.

At the Rosewall Hill and Ransom United Mines meeting, on Dec. 5, the accounts showed a loss on the quarter of 306*l.* 5*s.* 10*d.*, and a debit balance of 337*l.* 9*s.* 6*d.* Capts. Treweeke say—"For some time past it has been in contemplation to work a portion of the western part of the mine at a depth of 100 fms., where there is a lode of great size, and from which the former workers must have obtained a large portion of their monthly produce, which we find from their old cost-book could not have been less than 5 to 7 tons at the time the workings were abandoned. The estimated cost of bringing this part of the mine into full working order is from 400*l.* to 500*l.*, and when effected will give employment to a number of men who have recently been deprived of work by the stopping of several mines in the neighbourhood."

At the New Bampfylde Copper Mining Company meeting, on Wednesday next, the accounts will show a credit balance of 720*l.* 14*s.* 9*d.*, and the directors will declare a dividend at the rate of 5 per cent. per annum. The report by Capts. Pope and Comer fully describes the present conditions and prospects of the mine, and the directors trust that with economy now promoted to the utmost extent the indications of improvement in the lode at the 90, which has hitherto disappointed expectations, will lead to such an increased output as may compensate in some degree for the low price of ore.

At the St. John del Rey Mining Company meeting, on Wednesday (Mr. J. D. Powles in the chair), the accounts showed a nett profit on the working of the mines for the past half-year of 50,566*l.* A dividend of 4*l.* per share was declared. Details in another column.

The Nevada Silver Mining Company have received a telegram from San Francisco, stating that Mr. Clink took possession of the property on behalf of the company on Dec. 12.

The Turkish Government has resolved to entrust the working of the State mines and forests to the hands of private contractors.

On the Stock Exchange an increased amount of business has been transacted in mining shares during the week. The following quotations were officially recorded in British Mining Shares:—Mwyndy, ⅛, ⅜; South Condurrow, ⅝; Wheal Seton, 136; East Basset, 20; Great Wheal Vor, 15, 14¾, 15; Marke Valley, 3⅜; South Wheal Frances, 18.—In Colonial Mining Shares the prices were:—General, 21½, 21; Yudanamutana, 1⅜, 1¼, 1⅛, 1¼, 1⅜; Cape, 7⅞; Port Phillip, 1.—In Foreign Mining Shares the prices were:—Pontgibaud, 7½; St. John del Rey, 51½, 50½, 51⅜, 51¾, 50, 48; Pestarena, 1⅞, 2, 1⅞; Chontales, 2¼; Washoe, 1; Fortuna, 2⅛.

COAL MARKET.—The fresh arrivals this week reached 152 ships. The mildness of the weather had a depressing effect upon the demand for house coals, but upon a reduction of prices as below, business became more active, and a fair amount was done. Hartley's have continued a steady business at last week's prices. Hetton Wallsend, 21*s.*; Haswell Wallsend, 21*s.*; South Hetton Wallsend, 20*s.* 9*d.*; Hartlepool Wallsend, 20*s.* 9*d.*; East Hartlepool Wallsend, 20*s.* 3*d.*; Kelloe Wallsend, 19*s.*; Pettington Wallsend, 17*s.*; Harton Wallsend, 18*s.*; Hetton Lyons Wallsend, 11*s.*; Tunstall Wallsend, 18*s.*

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

PROSPER UNITED.—The copper ore for last month realised on Thursday the sum of 1639*l.* 9*s.* 6*d.* When the proceeds of the tin are added to this the profit for the month will probably exceed 500*l.* We need not say that any rise in the prices of tin and copper will be so much increase to the profits, even on the present rate of returns.

SOUTH CONDURROW.—A great change has taken place in the West Basset lode, in sinking below the 51 fm. level. The lode, from being 1 ft. wide, is now in the bottom of the shaft 9 to 10 ft. wide, indicating great deposits of tin and copper in depth. The 30 west, as also the 51 west, present favourable indications of early improvement.

GREAT NORTH DOWNS.—The water is now in fork to the bottom of Sleggan's shaft, where the lode is said to be worth 60*l.* per fm. This is expected to be the greatest mine in the district ere long.

BRONFLOYD UNITED.—There is a great improvement here. Since the new shaft was holed through to the cross-cut (which was driven north 20 fms. from the main, 52 fm. level) a winze has been started about midway in bottom of that cross-cut, and upon the north wall of the lode. This winze is now down about 5 ft.; it is carried 9 ft. long by 6 ft. wide, on the dip of the lode, and is worth for that length quite 4½ tons of lead ore per fathom, or 3 tons per cubic fathom. The winze will be continued down 13 fms., and then a cross-cut again driven to meet the future sinking of the new shaft. When these points are opened the company will possess large additional means of stoping this immense lode, which is nearly, if not quite, 7 fathoms wide; thus, in about four or five months the present regular returns of the mine will, in all probability, be increased from 80 to 150 tons per quarter. This company has, at very great outlay, but from profits, opened this new shaft, as it will hereafter save the drivage of levels of nearly 70 fms. long, which hitherto have been necessary at every 10 or 12 fms. in depth from the old shaft. An extended lease has been obtained for 21 years, making, with the residue of the old lease, a tenure of 29 years to run.

GEOLOGICAL SOCIETY OF LONDON.—December 5: Warington W. Smyth, M.A., F.R.S. (President), in the chair. C. J. H. Allen, F.Z.S., Park-crescent, N.W.; Henry Pitts Cassidy, Engineering College, Poona; Robert Etheridge, jun., of the Geological Survey of Victoria, Australia; Marshall Hall, Chaveland-terrace, Hyde Park, W.; Alfred Gutteres Henriques, F.Z.S., Stone-buildings, Lincoln's Inn; Henry Lainson, Heath House, Reigate; Dr. J. Murie, Regent's-park-road; and John W. Pike, mining engineer, Mexico, were elected Fellows. The following communications were read:—

1.—"A Description of some Echinodermata from the Cretaceous Rocks of Sinai," by P. Martin Duncan, M.B., Sec. G.S. [Hawkshaw, F.G.S.

2.—"Geological Description of the First Cataract, Upper Egypt," by J. C. 3.—"On the Drift of the North of England," by J. Curry: communicated by the Assistant-Secretary.

The following specimens were exhibited:—1. A large collection of rocks and some fossils from Upper Egypt; exhibited by J. C. Hawkshaw, F.G.S.—2. Cretaceous Echinoderms from Mount Sinai; exhibited by the Rev. F. W. Holland.—3. Specimens of Granite; exhibited by Professor Tennant, F.G.S.

On Wednesday, the following papers will be read:—1. "On a New Specimen of Teleopeton iguinense," by Professor Huxley.—2. "On a Section at Litcham, affording evidence of Glaciation," by S. V. Wood, jun.—3. "On the existence of a Third Boulder Clay in Norfolk," by F. W. Harmer, of Norwich: communicated by S. V. Wood jun., F.G.S.

SOCIETY OF ENGINEERS.—The next meeting of members will be held in the Lower Hall, Exeter Hall, Strand, on Monday, when Prof. Tennant will deliver a lecture on Granite, as a material for constructing Embankments, Bridges, &c.

SOUTH WALES INSTITUTE OF ENGINEERS.—The next general meeting of members will be held at Newport, on Thursday, when the discussion of Mr. George Brown's paper will be resumed, and the following papers, read at the last meeting, will be discussed:—"On Underground Lead," by Mr. M. Bates; "On the Clip Pulley," by Mr. H. W. Martin; "On the Duration of the South Wales Coal Field," by Mr. R. Bedlington; "On the Cornish Engine," by Mr. Loam. And the following papers will be read and discussed:—"Mechanical Ventilation," by Mr. G. Cope Pearce; "The Structure of Iron," by Mr. Vivian; "The Port of Newport, and its Coal Fields," by Mr. A. Bassett.

PRESENTATIONS AT ABERDARE.—Mr. John Jones, late overman at the Nantmelyn Colliery, has been presented with an address and a purse of gold.—Mr. Robert Lonie, late manager of the Powell's Duffryn Steam Coal Company's Cwmdare Colliery, has been presented with a handsome gold guard and medallion, on which was a suitable inscription. A number of speeches were made expressive of regret at Mr. Lonie's leaving, and referring in high terms to his uprightness as a man, and his competency as a manager. Mr. Lonie has just left Aberdare to take up an improved position under the same spirited employers at New Tredegar.—*Cambria Daily Leader.*

COMBINED WATER-WHEEL.—An ingenious, though impracticable, arrangement for augmenting the power obtainable from a given weight of water has been patented by LOUIS KRAYZE of Baltimore. The invention is described in the *Scientific American* as consisting of a combination of water-wheels, one using the water discharged from the other, and all connected, by proper gearing, to one common receiving shaft. The inventor claims to derive power from the water, which ceases to exert force after passing a given point below its centre, by receiving the water into the bucket of a wheel smaller in diameter, but of equal bucket capacity—which becomes a tail-race wheel, and, in turn, discharges into a third supplementary wheel, that utilises the waste water and contributes its quota of power.

£50 REWARD—WILLIAM GUNDRY POWNING.—Whereas a WARRANT has been ISSUED for the APPREHENSION of WILLIAM GUNDRY POWNING, late of 192, Gresham House, Old Broad-street, secretary to a mining company, upon a charge of FELONY, notice is hereby given, that a REWARD of FIFTY POUNDS will be PAID to any person who shall give such information as may lead to the apprehension of the said William Gundry Powning within six calendar months from this date.

The following is a description of the said William Gundry Powning:—Age, 33 years; height, 5 ft. 9 in.; brown hair, beard, and moustache; low forehead; wears his hair parted on both sides of his forehead. His eyelids drop a little, and over the left eye there is a mark about 1 in. long. He is a large fat man, and weighs about 17 or 18 stone.

It is requested that information may be given to Inspector HAMILTON, Police Office, Old Jewry, London, E.C.; or to Messrs. R. and S. MULLENS, 68, Cheapside, London, E.C.—Dec. 3, 1866.

LEAD AND IRON.—A GENTLEMAN in AYRSHIRE, SCOTLAND, has SECURED a LEASE for 21 years of all MINERALS (except Gold and Silver) on a LARGE EXTENT of LAND in that county.

From searches that have already been made, Lead has been discovered in at least five different places, and at several miles distance from each other. It appears to be abundant.

Iron of the hematite class has also been found, and from all appearances is in large quantities. A sample of the Lead and Iron will be seen at the office of the MINING JOURNAL.

As it will be inconvenient for the lessee to work these minerals, he is desirous to SUBLET or SELL HIS RIGHT TO THE LEASE, as may be agreed upon.

Any further information will be given by ALEXANDER BLANE, Esq., Alton Albany, Barr-by-Girvan, Ayrshire, Scotland, who will cause parties to be shown the places where the minerals are.

COPPER, SILVER, AND LEAD IN THE HARZ MOUNTAINS.—The PROPRIETORS of a VALUABLE MINE in the above well-known mineral district, promising most brilliant results, and combining advantages seldom to be met with, are DESIROUS of FORMING a LIMITED COMPANY, to work the lodes, which are of unusual richness.

Applications to carry out the project, and for further information, to be addressed to "E. A. S." MINING JOURNAL office, 26, Fleet-street, London, E.C.

WANTED, a SUB-MANAGER at a COLLIERY, where the output is expected to be from 100,000 tons to 120,000 tons per annum. Must thoroughly understand steam-engines and pumps.—Address, stating salary and references, to J. BLOMELEY, 45, Exchange-arcade, Manchester.

A GENTLEMAN having an extensive connection with merchants, manufacturers, and others, would be GLAD to UNDERTAKE the SALE of PATENTED ARTICLES or INVENTIONS, upon commission.—Apply to Mr. W. T. RAWLE, patent and mining agent, 8, Small-street, Bristol.

A GENTLEMAN, leaving London for the Colonies, WISHES to PURCHASE EFFICIENT ROCK-BORING and TUNNELLING MACHINERY.—Communications to be addressed to "M. G.," care of Messrs. C. Price and Co., County Chambers, Cornhill, London.

AUDITOR—MINES, COLLIERIES, IRONWORKS, &c.—An ACCOUNTANT, who has had many years' experience in AUDITING, will be glad to COMMUNICATE with gentlemen requiring PROFESSIONAL ASSISTANCE.—Address, "Auditor," Post Office, Camden Bazaar, Holloway.

A YOUNG GENTLEMAN, who has had considerable experience in ORE DRESSING (lead particularly), ASSAYING, &c., is DESIROUS of OBTAINING a SITUATION, either in a mine, assay-office, or in an office connected with mining. Has a thorough knowledge of French. References given. Address, "H. W.," MINING JOURNAL office, 26, Fleet-street, London, E.C.

PARTNERS WANTED in a LARGE ENGINEERING, FORGE, and FOUNDRY ESTABLISHMENT of long standing, on the Tyne. One of the partners to have thorough commercial knowledge, and be competent to undertake the financial and book department.—For information as to capital, &c., apply to "Engineer," office of the *Daily Journal*, Newcastle-upon-Tyne.

STEAM COAL—TO CAPITALISTS AND FINANCIAL AGENTS.—FOR SALE, a most PROMISING COLLIERY, now at work. Terms moderate.—Address, "F. G. S.," MINING JOURNAL office, 26, Fleet-street, London, E.C.

CARBERRY MINING COMPANY (LIMITED).—The Liquidators of the Carberry Mining Company (Limited) are PREPARED to ENTER into NEGOTIATIONS for the DISPOSAL of the company's mines, consisting of the Gurtavallig Copper Mine sett, situate on the shores of Bantry Bay, county of Cork. These mines are the nearest in point of position to the celebrated Berehaven Mines, and offer the strongest inducements for the judicious investment of capital.

Full particulars may be obtained by addressing the Liquidators of the Carberry Mining Company (Limited), 29, Westmoreland-street, Dublin.

WEST GREAT ST. GEORGE COPPER MINE (late Wheal Prudence), ST. AGNES, CORNWALL.—ONE THOUSAND TONS MUNDIC FOR SALE. Applications for contracts to be made to the Directors, at the mine. The mundic contains about 45 per cent. of sulphur.—Apply to Capt. THOS. WASLEY for samples.—December 12, 1866.

LLANFAIR GREEN AND BLUE SLATE QUARRY.—Manager, T. HARVEY, Esq.—TO BE SOLD, FIFTY SHARES at a very considerable discount.—Address, "N. K. H.," MINING JOURNAL office, 26, Fleet-street, London, E.C.

THE HENDDOL SLATE AND SLAB COMPANY (LIMITED), BIRMINGHAM.—The Transfer-books will be closed from the 27th December, 1866, to the 8th January, 1867, inclusive, for the purpose of PAYING at the latter date the INTEREST, at the rate of SEVEN AND A HALF PER CENT. PER ANNUM, guaranteed by the vendor.

W. HOLMDEN, Secretary.

COLONIAL BANK.—Subscribed capital, £2,000,000; paid-up capital, £500,000.

The Court of Directors of the Colonial Bank hereby give notice that, in pursuance of the provisions of the Charter, a HALF-YEARLY GENERAL MEETING of proprietors will be HELD at the London Tavern, Bishopsgate-street, on FRIDAY, Jan. 4, 1867, at One o'clock precisely, to receive the report of the proceedings of the Corporation, and for the election of five directors in the room of the following gentlemen, who go out by rotation, viz.—J. Q. Henriques, Esq., J. Gurney Hoare, Esq., Charles Marryat, Esq., Alex. Macgregor, Esq., and Rear-Admiral Whish, who, being eligible, offer themselves for re-election; also for the election of two directors in the room of Sir W. M. T. Farquhar, Bart., M.P., deceased, and Thomas Masterman, Esq., resigned.

Also for the election of two auditors in the room of Rodolph Alexander Hankey, Esq., resigned, and James Scott, Esq., resigned.

Rodolph Alexander Hankey, Esq., and James Scott, Esq., offer themselves as candidates for the vacant directorships, and W. M. Ross, Esq., and Joseph Hoare, Esq., offer themselves as candidates for the vacant auditorships.

Proprietors are requested to take notice of the following provisions of the charter, viz.—

1.—Every proprietor intending to become a candidate, or to propose some other proprietor as a candidate, for the vacant office of director or auditor, must, within ten days of the date hereof, signify by some writing under his or her hand, to be left within the same ten days at this office, either his own intention to become a candidate, or the name and place of abode of the candidate intended to be proposed by him or her.

2.—A list of candidates, with the names of the proprietors (if any) by whom they are proposed, will be exhibited in this office fourteen days prior to the date of election.

3.—No proprietor will be entitled to vote at this meeting unless his or her name shall have been registered at least three calendar months prior to the date of election.

The Transfer-books of the Corporation will be closed on the 26th inst., and re-opened on the 17th January, 1867.

By order of the Court of Directors,

C. A. CALVERT, Secretary.

13, Bishopsgate-street Within, December 4, 1866.

BOWLING IRON COMPANY, BRADFORD, YORKSHIRE.

BEST CRUCIBLE CAST-STEEL TYRES, AXLES, CRANK AXLES, BOILER PLATES,

Also COG WHEELS, and other CASTINGS.

This company is prepared to furnish the above-mentioned articles in CAST STEEL of a very superior quality, made principally from their own well-known

"BOWLING IRON."

Also BOWLING WROUGHT-IRON SOLID WELDLESS TYRES, of any size and to any section.

TO COAL OWNERS, AND OTHERS.

THE LONDON PATENT COAL COMPANY are now GRANTING LICENSES for the USE of their PATENT for the UTILIZATION of COAL DUST. All communications to be addressed to the Managing Director, 26, Martin's-lane, Cannon-street, E.C.

ANALYSES OF COAL, CANNEL, MINERAL OILS, and all OIL PRODUCING MINERALS are UNDERTAKEN by A. NORMAN TATE, F.A.S.L., &c.,

ANALYTICAL and CONSULTING CHEMIST, and CHEMICAL ENGINEER (Author of "Petroleum and Its Products," &c.), MOLD, NORTH WALES.

Plans and estimates for oil and chemical works prepared, and their erection superintended.

Assays of metals and their ores carefully conducted.

MR. CHARLES BAWDEN, POLDICE, ST. DAY, SCORRIER, CORNWALL, begs respectfully to inform his friends and the public that, in addition to his Mining Business, he has commenced that of an AUCTIONEER and APPRAISER, and any sales entrusted to him shall receive his careful attention. Mr. CHARLES BAWDEN'S long connection with the Mines of Devon and Cornwall, in the purchase and sale of materials, specially qualifies him for the valuation of all kinds of Mining Machinery, &c.

SANDYS, VIVIAN, AND CO., COPPER HOUSE FOUNDRY, HAYLE, CORNWALL, ENGINEERS, IRON AND BRASS FOUNDERS, MANUFACTURERS of PUMPING ENGINES for WATER-WORKS, MINING MACHINERY, MATERIALS, and TOOLS of every description.

Foreign mines supplied on the best terms, and at the shortest notice. Second-hand Mining Machinery and Pitwork in Stock; also a new 4 and a 2-horse power high-pressure vertical engines, with boilers, and a second-hand 19-inch whim engine, condensing.

JOHN HOCKING AND SON, ENGINEERS, REDRUTH, CORNWALL, CALL the ATTENTION of COLLIERY PROPRIETORS and WATERWORKS COMPANIES to the present favourable opportunities for the purchase of almost every description of CORNISH PUMPING ENGINES, at low rates. Plans, estimates, valuations, removal, &c., of every description of mining machinery undertaken.

CUTTING COAL.—It is proposed by Mr. J. G. JONES, of Blaina Ironworks, to render the coal-cutting machine self-acting, by applying a small working cylinder, combined with the large working cylinder, which gives motion to the pick, and the two ends of such small cylinder are connected by pipes to the end of the working cylinder. The outer ends of the piston-rods are connected with grip-levers, and there are the necessary arrangements for adjustment, so that the motion forward may be equal to the work done.

CRUSHING ORES.—The antiquated invention for breaking stones by throwing them against metal arms has been provisionally specified by Mr. S. F. SHOONMAKER, of Great Russell-street. The stones are thrown forwarr by shoulders on a suitable disc, and the whole apparatus is enclosed in a cylinded.

MANUFACTURE OF GAS.—An improvement in the manufacture of gas has been patented by Messrs. UPWARD and COCHRANE, which consists in the employment of Trinidad pitch in lieu of cannel coal or boghead, for augmenting the illuminating power of coal gas.

MINING IN AMERICA.—The five most profitable mines in the U.S. are the Savage Mine, which cost $108,000, and during the three months ending April last yielded $605,233; the Gould and Curry, cost $200,000, and during the same period paid $447,133; the Chollar, costing $448,000, yielded $440,000 in the three months named; the Belcher, costing $21,000, yielded $314,150; the Potosi, costing $86,300, yielded $308,120; the Imperial, costing $48,080, yielded $201,344. The production of the precious metals during the present year from all the mines in the United States is estimated from $82,000,000 to $106,000,000.

IRON IN AMERICA.—The iron product of the United States is gradually increasing. Pennsylvania is the leading producer, but the business is making fair progress in other sections, particularly in the Lake Superior region. The product of the Marquette Iron Mines for 1863 was 185,000 gross tons of ore, and 13,000 gross tons of pig-iron, against only 1447 tons eight years previously. Previous to the year 1856 there was not an iron blast-furnace in the U.S. using anthracite coal, while at present two-thirds of the iron blast-furnaces in the State of Pennsylvania are using anthracite coal to make iron.—*Mining and Manufacturing Journal* (Pittsburg, U.S.)

THE GOLD DIGGINGS IN NEW ZEALAND.—Gold mining operations are steadily carried on, and as the weather becomes milder the escort returns improve. The reports of the various wardens are hopeful and encouraging, and the miners are generally content. Meetings have been held at Tuapeka and elsewhere to petition against the project of transferring the management of the gold fields from the provisional to the general Government. Memorials on the subject have been forwarded to Wellington. The following is the amount of gold received since last mail:—Aug. 25, 5434 ozs. 15 dwt.; Sept. 8, 6585 ozs. 15 dwt.; total since beginning of the year, 112,130 ozs. 9 dwt.—*New Zealand Examiner.*

THE DIAMOND EXCEEDED.—The crystallised protoxide of copper recently found in crystals, transparent to red light, in Chessy (Rhone), far exceeds, in refractory power, the diamond. H. M. Fizeau has recently shown that both expand under heat.

RAILWAY CALLS.—The amount falling due in December is only 467,294*l.*—making the total for the year 1866, 14,015,163*l.*

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending Dec. 9 was 9897*l.* 15*s.* 6*d.*

LEAD ORES.

Date.	Mines.	Tons.	Amount.	Purchasers.
Dec. 7	Great Laxey	100	£22 11 0	Walker, Parker, & Co.
	Minera Boundary, &c..	30	13 1 6	ditto
	Dyliffe	45	12 14 6	A. Eyton.
10	Frongoch	60	12 7 6	Runcorn Company.
	ditto	60	12 6 0	ditto
	ditto	60	12 5 6	Panther Co.
	East Darren	65	13 8 6	Walker, Parker, & Co.
	Cwm Erfin	60	16 0 0	ditto
13	Talargoch	73½	13 13 0	A. Eyton.
	ditto	202	13 18 0	Walker, Parker, & Co.
	Great Rhosesmor	41	12 6 6	ditto
	Bryngwiog	35	13 6 6	ditto
	Talargoch	20	13 6 6	ditto
	Holywell Level	13	12 4 0	A. Eyton.
	Wagstaff	11	11 18 6	Walker, Parker, & Co.
	Pennant	5½	11 16 6	ditto
	Bwlchcoch	21½	11 18 6	ditto
	Dyfngwm	17	11 16 6	ditto
	Parrys	9	12 5 0	ditto
	Clegu Mawr	10	11 0 0	ditto

BLENDE.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Nov. 30	Great Laxey	300	£ 3 10 6	Vivian and Son.

BLACK TIN.

Date.	Mines.	Ts. c. q. lbs.	Price p. ton.	Amount.	Purchasers
Nov. 30	Pedn-an-drea	6 5 1 15	—	£ 293 14 2	Carvedras.
Dec. 8	Leeds & St. Aub.	9 8 1 8	£45 10 0	428 8 6	Chyandour.
	Wheal Uny	9 9 2 10	44 2 6	—	Trethellan.

COPPER ORES.

Sampled Nov. 28, and sold at Tabb's Hotel, Redruth, Dec. 13.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Prosper United	90	£1 12 6	Great South Tolgus	70	£3 12 6
ditto	64	2 19 6	ditto	42	4 17 6
ditto	63	5 1 6	ditto	37	5 2 6
ditto	60	4 13 0	ditto	32	3 12 6
ditto	54	6 3 6	Crenver & Abraham	86	2 17 6
ditto	53	1 17 6	ditto	34	3 16 6
ditto	49	4 1 6	ditto	28	3 7 6
ditto	47	2 16 0	Par Consols	76	3 17 6
Carn Brea	77	2 4 6	ditto	57	5 6 6
ditto	70	2 8 6	South Dolcoath	21	3 13 6
ditto	51	2 4 0	ditto	19	5 6 6
ditto	50	4 19 6	ditto	15	8 5 0
ditto	34	8 3 0	St. Day United	31	1 14 6
ditto	24	7 16 0	ditto	21	4 11 0
ditto	12	2 5 6	ditto	2	21 3 6
East Carn Brea	65	3 2 6	Mellanear	19	2 12 6
ditto	57	3 3 0	ditto	18	1 2 0
ditto	43	4 1 6	ditto	14	1 18 6
ditto	42	2 7 0	ditto	3	2 10 0
ditto	35	5 5 6	Champion's Ore	48	3 12 0
Rosewarne United	55	3 7 6	Rosewarne Consols	21	2 19 6
ditto	50	6 13 6	ditto	19	6 10 6
ditto	35	8 4 0	Treffry's Regulus	24	9 11 6
ditto	27	6 7 6	Beaglehole's Ore	13	3 2 0
ditto	16	1 15 6	Jenning's Ore	4	8 14 0

TOTAL PRODUCE.

Prosper United	480	£1699 9 6	St. Day United	54	£ 191 7
Carn Brea	318	1193 12 6	Mellanear	54	104 2 6
East Carn Brea	242	841 4 6	Champion's Ore	48	172 16 0
Rosewarne Untd.	183	1906 18 0	Rosewarne Con.	40	186 9 0
Great South Tol.	181	764 2 6	Treffry's Regulus	24	229 16 0
Crenver & Abra.	148	471 16 0	Beaglehole's Ore	13	40 6 0
Par Consols	133	598 0 6	Jennings's Ore	4	34 16 0
South Dolcoath	55	302 2 0			

Average Standard ..... £102 19 0 | Average Produce 6½
Average Price per ton £3 19 0
Quantity of Ore ..... 1977 tons | Quantity of Fine Copper, 128 tons 19 cwts.
Amount of Money ..... £ 7838 18 6
LAST SALE.—Average Standard ..... £104 8 0.—Average Produce 6⅛
Standard of corresponding sale last month, £101 3 0.—Produce, 6½.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
Vivian and Sons	499	£2184 13 9
Freeman and Co.	71¾	235 2 10
Grenfell and Sons	60½	351 11 8
Sims, Willyams, and Co.	248½	999 17 3
Williams, Foster, and Co.	230¾	875 9 4
Mason and Elkington	324	1295 17 9
Copper Miners' Company	110	451 6 6
Charles Lambert	209½	699 8 0
Newton, Keates, and Co.	10¾	43 16 2
Sweetland, Tuttle, & Co.	213½	699 15 3
Total	1977	£ 7838 18 6

Copper ores for sale at the Royal Hotel, Truro, on Thursday next.—Mines and Parcels.—Devon Great Consols 1437—Marke Valley 444—East Caradon 316—Brookwood 255—Okel Tor 230—Gawton Copper 192—Wheal Friendship 120—Bedford United 104—Bampfylde 86—Prince of Wales 76—Gunnislake 50—Fursdon 29—Lady Bertha 27—Wheal Edward 20—Collacombe 8—Daniel's Ore 2.—Total, 3390 tons.

Copper ores for sale at Tabb's Hotel, Redruth, on Thursday week.—Mines and Parcels.—South Caradon 521—Clifford 370—West Damsel 227—Phœnix 192—Fowey Consols 155—Hallenbeagle 146—Wheal Polmear 86—Great North Downs 74—Craddock Moor 55—New Treleigh 50—Grambler 25—Pembroke 5.—Total, 1906 tons.

WATSON AND CUELL'S MINING CIRCULAR

WATSON AND CUELL,
MINING AGENTS, STOCK AND SHARE DEALERS, &c.
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

MESSRS. WATSON AND CUELL having made arrangements for transferring their weekly Circular, which has had so large a circulation during the past ten years, to the columns of the *Mining Journal*, their special eports and remarks upon mines and mining, and the state of the share market, will in future appear in this column.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. J. Y. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring success in the aggregate," and Messrs. WATSON and CUELL have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and share dealing than there is at present; and, from the lengthened experience of Messrs. WATSON and CUELL they are emboldened to offer, thus publicly, their best services to all connected with mines or the market, as they have for so many years done privately, through the medium of their own Circular.

Messrs. WATSON and CUELL transact business in the purchase and sale of mining shares, and other securities, payments of calls, receipt and transmission of dividends, obtaining information for clients, and affording advice, to the best of their knowledge and judgment, based on the experience of more than 30 years active connection with the Mining Market.

Messrs. WATSON and CUELL also inform their clients and the public that they transact business in the public funds, railway, docks, insurance, and every other description of shares dealt in on the Stock Exchange.

Messrs. WATSON and CUELL are also daily asked their opinion of particular mines, as well as to *recommend* mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

Messrs. WATSON and CUELL having agents and correspondents in all the mining districts, and an extensive connection among the largest holders of mining property, have the more confidence in tendering their advice on all matters relating to the state and prospects of mines and mining companies, and are able to supply shares in all the best mines at close market prices, free of all charge for commission.

GOLD MINES—"X. N."—The average yield of gold in St. John del Rey ores is about ½ oz. of gold per ton, and in one half-year they once obtained as much as realised, 285,572*l*. The profit has been about 70,000*l*. a year, but the next dividend for the half-year is to be 48,400*l*., or 4*l*. per share, after carrying 10 per cent. to the reserve fund. This is the most successful gold mine of the day, and as such enormous profits are made, with so small a percentage of gold, we have always considered that Chontales, with its almost inexhaustible quantity of stuff, yielding in some places 5 ozs. and up to 20 ozs. per ton, and on an average about 2 ozs., ought to make the profit estimated by Capt. Paul in the prospectus, which was over 200,000*l*. a year.

"AJAX."—We know all about it, but can only confer privately.

WEST CHIVERTON—"W."—We know of no reasons for the decline in shares, except the market operations. The mine, we understand, never looked better; the 100 east and 80 west both having improved since the meeting.

"X. Z."—This and other matters shall receive attention next week.

POST OFFICE LONDON DIRECTORY.—Another edition, the sixty-eighth, of this extraordinary volume has just made its appearance, and does not appear to have at all decreased in size, in consequence either of the number of buildings pulled down, to make room for railways and other improvements, or of the number of firms and companies which have ceased to exist through the panic of May last; it is still an enormous book of upwards of 2900 pages, and still displays the same evidence of care in compilation and printing which has ever characterised it. In all works of this kind the accuracy can be better determined in use than by inspection at the time of issue, yet that the information given may be thoroughly relied upon is evident from the fact that even the appointment of Mr. Malins as Vice-Chancellor is duly recorded in the three distinct sections of the Directory, precisely in the same way as though the appointment had been made six months previously, yet Mr. Malins was only gazetted on Dec. 4; his name has likewise been removed from the several positions it previously occupied. As other tests of accuracy, it may be mentioned that the creation of Sir Daniel Gooch a baronet is recorded throughout; the name of the late Mr. Yardley, magistrate at Marylebone Police-court, is nowhere to be found; Mr. Vesey Fitzgerald is stated to be "Governor of Bombay," although he only received the appointment on Nov. 20; the names of Mr. Kavanagh, or of such portion of him as is to represent the people of Wexford, and of Mr. Charles Lanyon, the new Member for Belfast, elected on Nov. 27, are properly entered; Sir Hugh Cairns and Sir John Rolt each appear in their advanced position; and Sir William Bovill, the new Lord Chief Justice of the Common Pleas, as well as Mr. Karslake, who replaced him as Solicitor-General, are each described according to their new appointment. More than this it is scarcely necessary to state with regard to a work so well known as the Post Office London Directory, unless it be that its merits are so universally recognised that a rival—the Imperial Directory of London—was issued during the past year, with nothing to recommend it but the fact that it was in all material parts a copy of Messrs. Kelly's book; upon which grounds the Court of Chancery at once granted a perpetual injunction against its publication. The Directory is well entitled to its extensive patronage, and should find a place in every commercial establishment.

ADVICE TO PATENTEES AND INVENTORS.—The importance of care in the construction of patent specifications is carefully pointed out in a pamphlet entitled "Specifications: a Word of Advice to Patentees and Inventors," by WILLIAM SPENCE, Assoc. Inst. C.E., &c. After giving Lord Westbury's opinion as to what a specification should be—the substance of the opinion being that no material addition to the provisional should be permitted in the complex specification, Mr. Spence explains that it was found under the old law to be a defective principle to grant patents upon a mere title, and very truly observes that an indefinite specification would be no improvement. Mr. Spence does not seek to lessen the business of others in the same profession by attracting their clients to himself, but simply endeavours to demonstrate that inventors and patentees require the aid of competent professional advice, in order to protect their just interests; indeed, Mr. Spence makes an observation which exactly reflects the opinion of every patent agent of reputation—a not very numerous body, it is true—when he remarks, "My own conviction is that the profession of patent agency, rightly understood, is one that on grounds of public usefulness ought to be upheld, according to as high a profesional standard as is practically attainable." Mr. Henry has even suggested that all patent agents should, as a protection to inventors, be compelled to pass a strict examination before being permitted to practice, thus fully confirming Mr. Spence's views, that it is undoubtedly a very easy thing to become a patent agent on paper, but that experienced patentees never hesitate to admit the difficulty of the points which have occasionally to be resolved by patent agents, and, consequently, the severity of the preliminary mental training required to produce the requisite qualifications for the work—neither do they hesitate to acknowledge the value of the services rendered to them by competent patent agents. The pamphlet is well worthy the perusal of all connected with patent agency business, and especially of the agents themselves.

RAILWAY DEBENTURES.—Under the title of "A Few Remarks on Railway Debentures," a highly-interesting little pamphlet has just been issued by Mr. JOHN COLES, F.S.S., and Member of the Stock Exchange. The object is accurately to explain the position of railway debentures, and thus enable the intending investor to distinguish between those which are desirable as an investment and those which are not. There are two elaborate tables, showing in money value and percentage the amounts of debenture bonds, debenture stock, guaranteed stock, preference stock, and ordinary stock which has been issued by each company, and there is a very valuable note on the borrowing powers of railway companies and the legal rights of debenture holders. The pamphlet will well repay the attentive study of capitalists and speculators.

MINING IN CLEVELAND.—When all the furnaces are in blast, the Cleveland district produces at the rate of a million tons of iron yearly, and this quantity requires that over 5,000,000 tons of materials be brought into the town, besides the pigs going away. The latter mostly go inland, although large quantitities are sent by sea to Wales, of all places, where the Cleveland iron is largely used for making rails, for which it is peculiarly fitted by its strength and hardness. The Upleatham mines underlie the property of the Earl of Zetland, who derives a little income of 20,000*l*. or 30,000*l*. a-year from a royalty of 5*d*. a ton upon the stone taken out. This stone now costs about 4*s*. 6*d*. per ton in Middlesbrough. A few years ago Mr. Samuelson, of Banbury, now M.P. for that town of cakes, and who is also a successful agricultural implement maker, went down to Middlesbrough to an agricultural show. He had never, it is said, seen a blast furnace in his life, yet, hearing what was going on, he made a contract with Bolckow and Vaughan to furnish him with an unlimited supply of ironstone at so much a ton. He put up three furnaces, and afterwards sold them, together with his contract, to Messrs. Eluon and Co., of the South Bank furnaces, and they now receive their ironstone at about 3*s*. 6*d*. per ton, or 11*s*. per ton of pig made. Mr. Samuelson has since erected new furnaces.—*Engineering*.

THE DISCOVERY OF COAL IN SHROPSHIRE.—Mr. J. Evans, secretary of the Geological Society, referring to the paragraph which appeared in last week's Journal upon the recent discovery of coal in Shropshire, says, "It is stated that the coal has been found beyond the line which it was 'an article of belief among geologists to regard as bounding the Shropshire coal field on the east, and that the result of the working at the new Stafford pits has 'demonstrated the fallacy of the geological dogma.' Whatever opinions individual geologists may have held, it is well to know that such a belief, if ever it really existed, has not been universal. The following passage, written upwards of a quarter of a century ago by Mr. Prestwich (who is now one of the Royal Commissioners for enquiring into the probable duration of the coal supply of this country), will prove that by that eminent geologist at least, the occurrence of the coal measures beyond the Great Shropshire Fault, so far from being regarded as impossible, may almost be said to have been predicted:—'It is evident that the coal measures of Coalbrookdale are but part of an extensive deposit, from which they have been disjointed and separated by great subterranean movements. Hence we may infer that a portion of that deposit still remains intact below the overlying formation of New Red Sandstone of Shropshire, Cheshire, and Staffordshire, and it is not improbable that by other lines of disturbances traversing these counties the coal measures, although covered by the New Red Sandstone, may be in some places at no great depth from the surface.'"—*Trans. Geol. Soc.*, Second Series, Vol. V., page 472. 1840.

BAGILLT OIL COMPANY (LIMITED), FLINT.

MANUFACTURERS OF BLACK GREASE
FOR COLLIERY WIRE ROPES, TRAMS, WAGONS, &c., £5 PER TON.
TORCH AND LAMP OIL, 1*s*. PER GALLON (Casks free).
LUBRICATING OIL, 1*s*. PER GALLON (Casks free).

Notices to Correspondents.

*** Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be *filed* on receipt: it then forms an accumulating useful work of reference.

MR. A. TREGONING.—Can any reader inform me of the present address of Mr. Archelaus Tregoning, who was connected with the Clarendon Consols, in Jamaica, and the Dalecarlia Mines, in Sweden, and who, with his brother, also made some attempts to obtain the gold from the jacotinga or other refuse of some of the late Imperial Brazilian Company's Mines? The information asked will much oblige—VINDEX.

MINING IN ALGERIA.—If "T. C." (Paris) would furnish an account of the mine to which he alludes, "Copper Miner" would be much obliged: his object is to give some notion of the nature and value of Algiers, chiefly from personal observation, and "T. C.'s" report would aid that object.

SAFETY APPARATUS FOR MINE CAGES.—In reply to the enquiry of "P. C.," in last week's Journal, permit me to state that the names and dates of the patents he requires are—E. A. Fourdrinier, 1847, No. 11,557; James Owen, 1857, No. 284 and No. 2767; R. Aytoun, 1858, No. 250; and J. C. Broadbent, 1865, No. 2383.—J. F.

FIREPROOF AND PRESERVATIVE WASH FOR WOODWORK—"G. A." (Porthleven).—A cheap and efficient wash, adapted for the preservation of wood and brickwork may be made by the following process:—Take a sufficient quantity of good stone, lime and slack it carefully in a closed box, to prevent, as far as possible, the escape of steam; after it is thoroughly slacked pass it through a fine sieve. To every 6 quarts of this slacked lime add 1 quart of coarse salt, and 1 gallon of water. The mixture should then be boiled, and skimmed clean, and to every 5 gallons thereof add, by slow degrees, ¾ lb. of potash, and 4 quarts of very fine sand—the finer the better. Colouring matter may be added, according to fancy. Apply with a common paint-brush. This wash, if the sand be ground very fine, looks equally as well as ordinary paint, and is far more durable, besides being incombustible. It forms a hard cement, and as such will stop cracks in a roof or elsewhere. Two good coatings applied to bricks will render them completely impervious to moisture, whilst the expense is a mere trifle.

WHEAL TREVENNA.—If "P. J." or any other shareholder will write me through the post, I shall be most happy to answer any questions.—T. JENNINGS: *St. Neot, near Liskeard*.

FRONTINO AND BOLIVA MINING COMPANY.—If the directors knew of the late secretary's misdeeds before circumstances compelled their publication, grave suspicion attaches to them as guardians of the company's interests; or if, on the other hand, they did not know what was going on, they are certainly unfit for their position. I would suggest that an efficient committee be appointed to make a searching investigation into the deeds of their secretary, as in the case of the Caldbeck Fells Company, and I believe that nothing less will satisfy anyone who happens to be—AN UNFORTUNATE SHAREHOLDER.

TREREW WHEAL ROSE.—Can any reader give some information respecting the operations of this mine? Time was when favourable reports used to appear in the Journal, but of late nothing has been heard of it.—SHAREHOLDER.

ROSEWARNE UNITED.—In reply to "X. Y. Z.," in last week's Journal, the cause of these shares being at present so low in price is, doubtless, the general depression from which mining, in common with other things, is suffering; they, however, afford no index to the real value of the mine, which is being developed in a way to make it a lasting and valuable property, although a very large amount of explorative work has been done, particularly on the south lodes, yet during the last twelve months ore of the value of 6280*l*. has been sold, and if the standard had only been up to the average a good profit would have been made. This is not amiss for a young mine, which only requires to be more generally known, and then the shares will soon attain their real value.—AN ADVENTURER.

SIR.—I should feel obliged if some reader would inform me, through the Journal, the variation of the magnetic needle at Greenwich from 1836 to the present time inclusive.—A MINER.

NEW TRELAWNY.—"Truth," or any other shareholder desiring information, can, as is well known, obtain it at the company's offices, where the books, &c., are open to inspection daily, from 10 till 5 o'clock.—E. JONES, Sec.

DIRECTORS, AND THEIR POWERS IN LIMITED LIABILITY COMPANIES.—Can a director, or directors, prevent a shareholder in the company from entering the mine to inspect and survey the workings thereof at any seasonable time, for his own satisfaction, and without an order from the board, provided he does not interfere with the working of the mine, or anyone employed therein?—MINING ENGINEER.

ABRAHAM CONSOLS.—Application should be made to the secretary. We never recommend brokers, or "suggest companies in which to embark."

WHEAL TREVENNA.—I consider it necessary to trouble you once more with a few lines, in consequence of further remarks in last week's Journal on the management of this mine. It would be more satisfactory if persons making statements of this sort would affix their names to them, instead of sheltering themselves under initials, &c. This one states he has been a shareholder since the formation of the company. If that be so, he must have been fully aware that the *second* annual meeting has but lately been held, consequently the mine cannot have been at work *three* years. Neither in any balance-sheet can he find any amount like 1000*l*. paid to the officials. As to the other charge, of the directors not having a pecuniary interest in the concern, the necessary qualification is ten shares; some hold more, and they have the interest of the mine at heart as fully as anyone not holding that position, whilst the majority of the members of the company are not qualified to accept the post, if they were willing and competent. As shareholders do not usually attempt to deteriorate their property, which appears to be the object in this instance, I can but conclude from the misstatements made that the writer has no interest in its welfare.—F. NEVILL, Secretary.—[In my letter published last week, in the second paragraph, 90 fms. should read 30 fms.]

COLLIERY WORKINGS.—The papers on the Detection and Removal of Gas will be continued in next week's Journal.

SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

The papers on Coal Mining in France, and on the Mineral Resources of Newfoundland, will appear in next week's Journal.

THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, DECEMBER 15, 1866.

The progress of the ROYAL COAL COMMISSION is watched with much interest, and we hear of active exertions on the part of many of the Commissioners. Mr. WOODHOUSE appears to be organising a complete system of examination over the Midland Counties. Mr. HARTLEY, of Wolverhampton, who will be assisted greatly by Mr. BAKER, the Colliery Inspector for that district, is arranging for an equally full investigation of all the conditions prevailing over the Staffordshire and Shropshire coal fields. (There have been some curious mistatements respecting the coal recently "won" by the Lilleshall Company. So far from there having been any discovery leading to a proof of the extension of the Shropshire coal field beyond its hitherto known limits, the ground in which the new sinkings have been made is marked as Coal Measures on the Geological Maps and Sections; and it has been specially described by Mr. E. HULL, in his Memoir accompanying those maps. Beyond this, Mr. PRESTWICH examined this piece of country some twenty-five years since, and predicated the existence of coal where it has now been found.) Mr. DICKINSON, the only Colliery Inspector on the Commission, has been issuing numerous circulars over the several coal fields which the Commission has placed under his charge. We are informed that Mr. CLARKE, of Dowlais, is collecting much valuable information bearing on the waste of coal in combustion, &c.

Committee E, consisting of Sir RODERICK MURCHISON, Bart., and Mr. ROBERT HUNT, F.R.S., have issued a very important circular letter, soliciting answers from the coalowners to the subjoined series of questions. The purpose of this committee being to determine with all possible accuracy the production of coal in each coal field, and its distribution, the questions are put so that the replies sought may be given in detail without trouble, and we hope the value of the knowledge derivable from the facts thus collected, when properly digested, will be so apparent to all coalowners that there will be no difficulty in obtaining all that the Commissioners ask for. The value of any Report from the Coal Commission will entirely depend upon the extent to which they may be enabled to predicate, from the results of the past, the probabilities of the future. Considering the constitution of the Commission, we may look forward to receive eventually a report which shall be a guide to the manufacturer and an index to the commercial world. We have as yet no special information respecting the work done, or about to be done, by the other Commissioners; but it is evident that considerable activity prevails, from which the most favourable results may be anticipated.

The following are the queries which the Committee desire to have answered:—

1.—The name and situation of colliery.
2.—The name of firm or individual working the colliery.
3.—The total quantity of coal raised in statute tons of 2240 lbs.
(It will be important if answers can be obtained according to the following form.)
4.—The distribution of the coal from above colliery:—
(*a*) Colliery consumption (engines, fires on bank, allowance or workmen's coal, if any). (*b*) Used in ironworks:—1. Blast-furnaces. 2. Mills and forges. 3. Foundries. (*c*) Used in metallic mines. (*d*) Used in smelting-works (other than iron). (*e*) Used in lime-burning. (*f*) Used in potteries. (*g*) Used in brick and tile works. (*h*) Used in gas manufacture. (*i*) Used in waterworks. (*j*) Used in mills and factories. (*k*) Used in other manufactures. (*l*) Landsdale, for domestic and other uses ("Landsdale" is understood to mean all coal and slack sent off by carts). (*m*) Used in making oil.
5.—The quantity of coal coked.
6.—The quantity of coal used for railway purposes.
7.—The quantity of coal used by steam-ships:—1. Coasting trade. 2. Ocean trade.
8.—What quantity of this coal was sent out of the district by railway or canal?
9.—If sent to ports for shipment—1. How much exported to foreign parts? 2. How much sent coastwise?

The success which attended the recent introduction into this and other money markets of the Russian Loan has naturally stimulated other Governments which are in need of pecuniary assistance; and there is every reason to believe that early in the coming year several foreign countries will present themselves as borrowers of our capital. It is already well known in the City that the Government of Portugal intends to avail itself of the abundance of money in this country, and soon after the assembling of the Cortes, on Jan. 1, the Minister of Finance will apply for authorisation for the issue of 2,000,000*l*. stock, at 3 per cent., to meet the requirements of the State. Supposing this to be done at 40, as respects cash to the Exchequer, the present price of Portuguese Three per Cents. being about 43, only 800,000*l*. will be the result in money, which, of course, is a very trifling sum when alluding to Russia and such countries; but to Portugal it is a serious item, and it is difficult to understand how the Minister proposes to meet this increased burden on the resources of the country, which, as is well known, are already drawn on to the utmost. Portugal, however, has ever kept faith with its creditors, and, necessarily, the antecedents of the country will go a great way, and justly so, in giving faith to those who may desire to embark capital in this way; so that it is quite possible the proposed accommodation may be readily obtained in the London market. An open loan of this kind is much more desirable than the ruinous system of the Treasury drawing bills on the London Finance Agency, and getting the drafts discounted at exorbitant rates, which has foolishly been resorted to for some little time past, to avoid the necessity of a loan, so rendering matters much more difficult of adjustment, although putting off the evil day by such additional and permanent charges on the country. So closely associated as this country is with Portugal, it is a subject of much general interest, apart from the abstract question of finance, and it will, consequently, be more than ordinarily important to see the statement which Senor FONTES, the Finance Minister, will lay before the Chambers as the Budget for 1867.

In the official document for 1866 this Minister showed that the income of Portugal was 3,572,142*l*., and the expenditure 4,758,607*l*., thereby admitting a deficit of 1,180,464*l*., which deficit, Senor FONTES anticipated, would be reduced in various ways to 1,021,200*l*., and which would be further decreased by the sum of 661,116*l*., which the Government had to receive from the South-Eastern Railway Company of Portugal, under a contract which had been entered into in October, 1865, leaving only 149,084*l*. to be met, and which he expected to effect by reductions in several departments, and, "without," said the Minister, "the creation of stock, or the imposition of additional taxation." It is true that the South-Eastern Railway Company of Portugal did give acceptances, or drafts, to the Government for the amount agreed to be returned, and about the sum stated; but it is equally true that the acceptances, or drafts, so given were, one and all, dishonoured in London, and the whole thrown back on the Treasury in Lisbon; so that instead of the deficit, as presented in 1866, being removed, as anticipated, the difference between receipts and expenditure must, necessarily, be much more in the Budget for 1867, and hence the absolute necessity of the intended loan. Indeed, we do not see how such a small sum as 800,000*l*. will meet the exigencies of the State, and we shall not be surprised if the proposition of the Minister of Finance to the Chambers is not of a more extensive and comprehensive nature than that now mentioned in City circles as the probable amount. Portugal is a fine country, abounding in natural riches of every description; but, with the exception of the northern population, the people are inert, and those who exercise control in the various departments of the State are, relatively, much more wanting in the energy which is necessary to develope the advantages of the country, and to keep pace with the requirements of the age in every clime. The mineral wealth of Portugal is very great, and the quantity of luxurious land uncultivated is extensive, not only as applied to the State proper, but what belongs to municipalities and the Church, all of which could be brought into ready and lucrative cultivation for cotton, grain, or other produce, if the respective owners, unable or unwilling to prosecute works on their own account, did not check extraneous enterprise by the exorbitant demands made for land, so soon as there seems any symptom of demand, although such land lies dormant and valueless. The debt of Portugal, internal and external, collectively is about 44,000,000*l*. sterling and the population is about 4,000,000, so that the national burden is just 11*l*. per head: and as the existing revenue from taxation is nearly 1*l*. per head, throughout the length and breadth of the land, it is difficult to anticipate how the Minister of Finance will propose to meet the increased demand on the people, if the loan be granted to cancel the existing deficiency between income and expenditure.

AMERICAN METALLURGY.—The total number of railroad rolling-mills in the United States is returned at 39, of which 14 are in Pennsylvania. These mills produce 735,000 tons annually, of which upwards of 300,000 tons are made in Pennsylvania. The total number of anthracite furnaces in Pennsylvania is 61. The quantity of iron produced by them in four years preceding the late war was 1,359,186 tons; in the four years of the late war the production was—1861, 409,222 tons; 1862, 470,315 tons; 1863, 577,638 tons; and 1864, 681,018 tons: making a total of 2,141,200 tons. These figures show how greatly the supply can be increased when a reliable market is assured, and probably it has been further augmented this year.

CUTTING COAL BY MACHINERY.—An invention has been patented by Mr. G. E. DONISTHORPE, of Leeds, which has for its object improvements in getting coal and other minerals, and in machinery employed for that purpose, and is applicable to steadying the machines employed in cutting. He proposes first to cut into the roof of the mine a shallow groove, a short distance from the face and parallel with it, and from this groove he obtains the requisite holding for steadying the machine, and preventing it from being forced back. Wheels or guides at the top of the machine may for this purpose be caused to run in the groove in the roof, or wooden beams or rails may be fixed in the groove, and the requisite holding of the machine may be obtained from these beams. He has a special machine for forming the grooves.

CHEAP ELECTRIC CLOCK.—Scarcely a railway accident of magnitude has hitherto occurred the origin of which could not be traced to want of punctuality, and although professedly Greenwich time is kept on railways generally, it must be admitted that even a comparison of the clocks of two stations next to each other affords undoubted evidence of want of isochronism. An invention, however, is now being introduced into this country by a Belgian, who can supply indicators which will work in absolute unison with (say) the Greenwich Observatory regulator at about 32*s*. each. The indicator has but three wheels and two electro-magnets, one telegraph wire, and an ordinary Daniell's battery, will cause all the dials to indicate the minutes simultaneously; and as the entire indicator can be hermetically closed, it would work for years without attention or repairs. By this arrangement the electric clock is changed from an

expensive luxury to the most economic indicator extant. Details of the invention will be found in another column.

FOREIGN MINING AND METALLURGY.

Some months since, when new blast-furnaces were erected in the Moselle and at Longwy fears were expressed that the production of pig was not proportioned to the French iron trade, and regrets were also heard that rolling-mills had not been created. What had been predicted has now occurred. The blast-furnaces find it impossible to dispose in the district of all the pig made, and it has become necessary either to seek for distant outlets, and to compensate the increased transport expenses by reductions in the sale prices, or to submit to an accumulation of stock, or to restrict the production, and even to extinguish some blast-furnaces. It is this latter course which the forgemasters of the East of France seem likely to adopt, since the high price of combustible breaks down all their calculations as to cost prices. Already blast-furnaces have been extinguished at Ars and Novcant. There are rumours that three blast-furnaces will be blown out in the Longwy district, and other extinctions are also projected. The putting of furnaces out of blast is a grave, and generally costly, measure, but it is an energetic remedy which has two effects—first, reduction in the price of coal, the consumption being less; and, secondly, advance in the price of pig. At St. Dizier charcoal-made pig is quoted at 4*l.* 8*s.* 10*d.* per ton. Iron wire is better supported at 10*l.* 8*s.* per ton. The Direction of Customs has just published the commercial movement into and from France during the past ten months of the current year, from which we glean the annexed results:—Pig-iron admitted free of duty to Oct. 31 this year 75,648 tons, as compared with 78,773 tons in the corresponding period of 1865; pig admitted on payment of duty to Oct. 31 this year 49,663 tons, as compared with 57,831 tons to the corresponding date of 1865: making a total of 125,311 tons to Oct. 31 this year, as compared with 136,608 tons to the corresponding date of 1865. Iron and plates admitted free of duty to Oct. 31 this year 51,069 tons, as compared with 40,592 tons in the corresponding period of 1865; iron and plates admitted on payment of duty to Oct. 31 this year 1584 tons, as compared with 1217 tons to the corresponding date of 1865: making a total of 52,653 tons, as compared with 41,809 tons to the corresponding date of 1865. The Eastern of France Railway Company has submitted for the approval of the Government a Franco-German tariff for certain metallurgical products. This tariff, which will enable the works of the Moselle and the Haute Marne to forward their manufactured irons into Rhenish Prussia and Hesse *via* Forbach, has been calculated with the German railways at the reduced rate of eight-tenths of a penny per ton per mile on all the French mileage, and eight-tenths of a penny per ton per mile on all German mileage exceeding 31¼ miles. Mention is made of the conclusion in France of contracts on American and Russian account.

In all the Belgian coal basins transports by boats are being pressed forward, as apprehensions are entertained with respect to frost, and coal workers know that for regular deliveries reliance cannot be placed on the Belgian State lines. The complaints made against the management of the national network of lines are general, both as regards the want of plant and the blocking up of the lines. The Liége station and all the eastern lines are obstructed with trains which they have not time to carry, and thus the forced immobility of a part of the plant aggravates still further the scarcity of trucks. "The administration of the State lines," says a Liége letter, "has thought it right to reduce its transports in order to relieve its lines, and it has attacked in the first instance coal, which it refuses to receive in its stations. By this measure it strikes with the same blow the collieries and the whole industry of the country; it thus compromises interests of the highest importance, and deprives numerous labourers of work. Before arriving at this result the administration should have commenced by stopping at the frontiers, or at least diverting the numerous transit trains, the passage of which stops the circulation in the stations, and employs the insufficient locomotive power. The administration would thus have proved its respect and attention to national interests. As it is, the complaints made are strong and unanimous." It will readily be understood how hard it is for Belgian coal workers to offer their coal for transit without being able to find trucks in which to convey it, while they see pass before their eyes trains of Prussian coal conveyed into France at half the rate per ton per mile charged for the conveyance of Belgian coal. In the Couchant de Mons all preparatory works, the execution of which is not indispensable, are being suspended in order that the whole staff of the mines may be devoted to the production of coal. Prices are very firm. Although the rates current for coal, however, are now very high, it does not follow that all the collieries are realising exorbitant profits, as in the Liége district, for example, several workings engaged in March and April (when political events where somewhat alarming) half or a third their annual production at comparatively unremunerative terms. These collieries cannot, then, profit from the high rates current except to a small extent, while they have at the same time to sustain the effects of an advance in wages. In the Belgian iron trade there are hopes and prospects of future orders. The grievance of the Belgian ironmasters just now, however, is, perhaps, not so much the inactivity of the iron market as the high price of combustible. The Belgian General Railway Plant Company has held another meeting. M. Sabatier presided, and on being interpellated by a shareholder, he stated that the position of the company had not materially changed for the worse, and as long as the administration had in reserve a part of a credit of 96,000*l.*, opened two years since by some Brussels bankers, it appeared to the directors that it might continue its operations, but that this credit was, unfortunately, exhausted in the payment of debts. The directors also stated that, in consequence of the operation of circumstances which they could not avert, they had found it impossible to dispose of the useless premises of Clichy and Maubeuge at the estimated price, and that finally, parties who had advanced loans on mortgage requiring repayment without further delay, the liquidation of the company had become a matter of urgency. The meeting accordingly decided on the liquidation of the company, and appointed as liquidators MM. Demeur, Réalier, Taillard, Mourion, and Durieu. MM. Decamps and J. Jacobs were also appointed supplementary liquidators. The meeting conferred on the liquidators the most extensive powers, both as regards the mode of the liquidation and also the operations which it may necessitate. At the same time the liquidators cannot treat for the alienation of any of the company's property.

Chilian copper has remained feeble on the Havre market. The recent sales comprise 50 tons of disposable at 76*l.* to 76*l.* 4*s.* per ton, Paris conditions; and 25 tons of disposable Urmenata at 75*l.* 10*s.* per ton. There has been some talk also of the sale of about 100 tons of Chilian, to be delivered at the end of February, at 77*l.* per ton, but this affair is not known in a certain manner. The stock of copper on hand at Havre, Nov. 30, comprised 74 tons of United States, 4800 tons of Chilian in bars or ingots, and 100 tons of minerals from various sources, or of pure copper about 4820 tons, as compared with 4320 tons on Oct. 31, 1866. The article remains feeble and neglected at Paris, where English is quoted at 85*l.*, Chilian at 76*l.* 10*s.*, and Corocoro mineral at 79*l.* per ton. A lot of American, imported recently at Antwerp, remains offered at 116*l.* per ton. Transactions in copper have been very restricted on the German markets, and prices continue to fall, principally in consequence of the far from favourable position of the English market. Banca tin, after experiencing a certain feebleness on the Dutch markets, has again hardened in value; sales have been effected at 47¼ fl. to 47¾ fl. This good tendency seems justified by a comparison of the annexed figures, which indicate much more considerable deliveries during the last two months, as well as a sensible reduction in the unsold stock of the Society. The deliveries and stock during the first eleven months of the last five years are as follows:—

Month.	1862.	1863.	1864.	1865.	1866.
January .....Blocks	5,105	9,335	5,165	4,230	11,950
February	8,465	8,665	9,190	4,987	7,959
March.....	4,335	7,650	6,085	9,640	17,236
April	6,766	4,638	6,377	5,660	24,192
May.....	9,400	4,760	6,443	3,890	22,739
June	4,650	9,172	8,928	5,900	10,579
July.....	34,400	14,757	25,851	27,297	4,574
August	30,637	29,764	55,526	33,611	11,525
September	12,119	5,453	13,950	9,450	7,950
October.....	12,332	6,816	9,600	10,410	32,950
November.....	7,265	8,150	4,318	12,300	26,250
Total.....	135,454	109,160	151,427	127,375	177,855

The stock on schedules, Nov. 30, 1862, was 73,690 blocks, as compared with 79,670 blocks, Nov. 30, 1863; 71,032 blocks, Nov. 30, 1864; 109,458 blocks, Nov. 30, 1865; and 140,109 blocks, Nov. 30, 1866. The unsold stock of the Society of Commerce, Nov. 30, 1862, was 55,027 blocks, as compared with 50,358 blocks, Nov. 30, 1863; 66,294 blocks, Nov. 30, 1864; 90,300 blocks, Nov. 30, 1865; and 60,625 blocks, Nov. 30, 1866. Business has been moderate, but prices have been firmer, at Paris; the article has also been better sustained on all other markets. No material change has occurred in lead. Transactions in zinc have acquired a very great development on the controlling markets. On the Breslau and Hamburg markets an advance has been stimulated by an absence of disposable goods.

IRON MOUNTAIN.—The mineral wealth of Missouri (writes a correspondent) is enormous. I went with a party to see a mountain 800 feet in height, composed of almost solid iron; huge boulders of iron ore line the sides of this hill, and beneath the surface the iron is in a solid mass, almost as though it has been smelted. Prof. Silliman has estimated that the iron extends to a depth of 1200 feet, and that it would take the whole world 1000 years to use it up. It is very little worked at present, because no coal has been found in Missouri. But "Pilot Knob," as the mountain is called, will not be suffered to remain a mere natural curiosity many years more.

PETROLEUM, AND ITS USES.—By condensation of the gases first coming off from petroleum, Prof. P. H. Van der Weyde, of Girard College, U.S., has succeeded in obtaining a liquid which boils at only 408°, and produces most intense cold upon evaporation. It has been named Chimogene. By applying heat to the petroleum, and gradually increasing it, there is obtained in succession gazoline (an inflammable and explosive liquid, which may be used without danger in metallic lamps filled with sawdust), naphtha, benzine, kerosene, and paraffin, leaving only a coke—which differs widely from coal coke—behind. Petroleum itself is the best lubricator known, and is applicable alike to the most delicate mechanism and to the heaviest machinery; whilst by slow distillation, at a low temperature, hair oil, liniment, and a petroleum castor oil have been obtained; and from petroleum benzole—treated with nitric acid, nitro-benzine, or the artificial essence of bitter almonds—is produced, and largely used for flavouring.

PERUVIAN SILVER MINES.—Silver and gold are extracted in various places in Peru; but the only mines of importance are the silver mines of Pasco. Silver sometimes is found in native state, but most often in sulphides of silver, in argentiferous pyrites, carbonates and sulphates of copper. The processes made use of at Pasco are primitive. The wet ore is crushed by means of machinery put in motion by water power. From thence it is placed on a circo—basins of masonry within low walls. It is mixed with 10 or 11 per cent. of sea salt, and turned with a shovel, and horses or mules are driven round upon it for several hours; quicksilver is then added and afterwards lime. This mixture is allowed to rest for two or three months, then it is put into bags, and an amalgam of silver and mercury is obtained, free from any foreign matter. The amalgam is enclosed in large earthern jars, at the mouth of which a gun-barrel or iron tube is fixed, that leads to a vessel full of water for condensing the quicksilver. It is then heated, the mercury evaporates, and the silver remains. A great loss is caused by this rough process—75 per cent. of the mercury employed disappears. The slowness of this process, the loss that it causes, and the scarcity of labour, all these have greatly diminished the working of the Pasco mines, and Peru scarcely yields annually gold and silver to the value of 6,000,000 piastres.

MINING, METALS, AND MINERALS—PATENT MATTERS.

By M. HENRY, Memb. Soc. Arts, Assoc. Soc. Eng.

Among the most important industrial questions of the day few have occupied more attention in journals devoted to the useful arts than the subject of smoke consumption. Time was when every tall chimney which bristled in our towns and cities was allowed to emit, without interruption or disturbance, its dense volumes and wreathing clouds of ugly smoke, to impregnate the atmosphere, choke the larynx and lungs, and tarnish our public buildings and private chattels. At length, even slow-paced British legislation thought fit to interfere, and insisted on a cessation of the evil, without, however, in anywise recommending a remedy. The best means of consuming smoke, hence, became a favourite topic of engineers and scientific writers, and the subject of numerous patents; and the topic is even now far from being exhausted. The labours of the late Mr. C. Wye Williams in this direction should assuredly not be forgotten. In connection with this subject, it may be observed that Mr. WRIGHT, the smoke-consuming furnace engineer, of Homerton, has obtained another patent relating to furnaces, furnace-doors, and furnace-bars. His invention has been just specified (patent passed by the present writer). Mr. Wright proposes to introduce currents of atmospheric air through the passages formed through the thickness of the brickwork of the furnace, and leading into the crown of the furnace, where there are openings, through which the air drawn or forced through the brickwork is projected into the interior of the furnace, above the bridge—that is to say, nearly over the fire-bars. The current of air through these passages is admitted, intercepted, and controlled by throttle-valves or other valves or doors, worked by hand or bell crank-levers, or other connections, attached to the furnace-door, so as to be opened therewith. If it be desired to admit cold air into the furnace, instead of heated air, the air is not passed through the long passages in the brickwork, but merely through a passage formed therein, and communicating with the open air, the flow being governed by a slotted slide, worked by connections with the furnace-door or otherwise. An improved furnace-door is described, having slots formed in it, over which is fitted a slide-plate, also slotted, and which opens by the opening action of the furnace-door, so as to bring its own slots directly over or coincident with the slots in the door, and thus admit currents of air into the furnace. The slide is moved back to its previous position by hand, so as to bring its close or solid parts over the slots in the furnace-door, and thereby close them. Mr. Wright sometimes combines with the door a sort of screen or plate, dependent in front of and at a little distance from the slide, so that it prevents undue external radiation of heat, and allows air to pass under it into the furnace. Improved fire-bars are described, the peculiarity of which consists in forming them with lateral openings, communicating with openings in the bottom of the bar; these openings are sometimes made tapering, or wider at the bottom than at top, being divided by solid parts of the bar; and sometimes the side openings and bottom openings do not lead immediately into each other, but into hollow parts of the bar. A fan is described, in which a disc is employed to divide the fan-case, and carry the blades, some being on either side of it, so that this disc divides the currents of air, and prevents them from impinging against each other.

Among recent applications for Patent appears one made by W. H. RICHARDSON, for the manufacture of iron.—CHUBB has applied for a patent for a process of and furnace for the manufacture of steel, and also of metal having some of the properties of steel.—DE WISSOCQ and KRASINKI have applied jointly for a patent for treating ores of metals whose sulphates are soluble in water.—Capt. NANGLE has applied for a patent for armour plating war-vessels, forts, and other structures requiring to be armour-plated. Just at present the number of applications referring to munitions of war is rather extensive. There are several in the last not very large list of petitions for patents, and such an array looks ominous at a time when our neighbour across the Channel is about to hold a high festival of peace. Possibly the maxim, "Si vis pacem para bellum," may explain the circumstance that fire-arms bristle so portentously and prominently in the Patent List, by way of preparing for the promised triumph of the peaceful arts, which—appropriately enough, if this view be maintained—is to be held in the Champ de Mars.

Among the Notices of intention to Proceed appear the four following. Any opposition intended to these must be entered on or before Jan. 1:—BIRKBECK, washing coals, ores, and other minerals.—BODMER, cements, concretes, and artificial stone.—KIRK, rolling metals.—WELCH, cements, and securing same to iron and other metals.

Among sealed Patents is that of Mr. WRIGHT, of Shepherd's-lane, smoke-consuming furnace engineer, a summary of whose specification appears at the commencement of this article. The title is for improvements in furnaces, furnace-doors, and furnace-bars.—Messrs. HALL and COOKE, the miners' safety lamp manufacturers, of Birmingham, have sealed their patent for improvements in miners' safety-lamps (patent passed and specification filed by the writer). The specification of this invention relates to a subject of great interest to the mining world, and I contemplate offering a summary of it in next week's article.

The recent provisional specifications of Applications for Patent not proceeded with include a communication from A. GUIBERT to C. E. Brooman, which relates to a varnish suitable, among other applications, to the preservation of metal from oxidation and fouling. The varnish consists of a mixture of galipot, resin, essence of turpentine, powdered sulphuret of copper, and a small proportion of powdered regulus of antimony.—Also, an application from L. F. SCHOONMAKER, of Bloomsbury, for machinery for breaking stones, ores, and other hard substances. The apparatus is so contrived that the stones or other substances to be broken are subjected to a succession of violent blows from several series of metal bars, by the percussive and centrifugal force of rapidly-revolving metal arms—the substances being alternately struck by and thrown against the bars until sufficiently reduced.

MURRAY has patented an apparatus for kneading, compressing, moulding, or forming clay, peat, or other plastic substances. In this apparatus, two pairs of rollers are used, one pair being either plain, corrugated, or fluted, the other pair having deep flutings, grooves, or recesses; these pairs of rollers rotate in opposite directions, and thereby force the clay or other substance to be kneaded into a space below, communicating with exit channels.—FOMBUENA has patented an improvement in railway and other sleepers or supports, in which he proposes to form or fit them with clips or chairs, so that they may hold rails or bars securely in position, without the aid of bolts or nuts.—FOSTER and HOLLINRAKE have recently specified a patent for moulding pipes, pillars, rollers, or other articles. They place the pattern between two plates, or in an aperture in a plate, and the moulding-box is placed thereon, being maintained by pins engaging in holes. The patterns are supported on bearers; in one arrangement rollers are used, having indentations or projections thereon.—TREGASKIS, of Perranarworthal, Cornwall, has patented a plan for clearing, deepening, or enlarging rivers, or creeks, by using a triangular or otherwise shaped frame or box, placed at the part where the flow of the water is to be intercepted, and its force to be concentrated, such frame or box being so disposed that its lower edges lie on the ground, mud, gravel, or bed of the water, and its sides form vertical walls.

PREVENTION OF RAILWAY ACCIDENTS.

In connection with all endeavours to secure safety upon railways there is, probably, nothing of greater importance than punctuality; and it is to the want of that essential that almost every railway accident is traceable; consequently an invention, which is the absolute isochronism of all the railway clocks in the kingdom, cannot fail to be of the greatest utility. Hitherto electric clocks have been rather complicated contrivances, and for this reason by far too costly luxuries for practical adoption: but an invention is now about to be introduced by Mr. VAN BUSEL, of Brussels, which promises to render us as familiar with electric timekeepers as we already are with telegrams or penny postage stamps. From the very nature of the invention advantages are secured which have before been scarcely hoped for—there is nothing to prevent every railway clock in the kingdom indicating minutes with the Observatory clock at Greenwich, and that, too with a first cost scarcely equal to the amount at present paid annually for keeping the existing clocks wound-up.

It is proposed to employ certain novel arrangements of apparatus in connection with a regulating pendulum clock, for indicating simultaneously at numerous and even distant points in any given town, district, or country, the time of the day in hours and minutes upon clock dials. Connected with the regulating clock (the pendulum of which beats seconds) is the shaft of a commutator, which carries a pinion that gears into a wheel on the arbor of the minute wheel. This gearing serves to rotate the shaft once in two minutes. The commutator shaft carries at its extremity an ivory cylinder, by which the currents of electricity employed to actuate the clocks or time indicators will be constantly and alternately changed from positive to negative, and *vice versa*. The ivory cylinder is fitted with two insulated metal discs, which are set concentric therewith, and dip respectively into one of two mercury cups placed below them, and brought into connection with opposite poles of a battery. Platinum wires from these discs are led to one end of the cylinder, and laid parallel to the axis of the cylinder, and at opposite sides of its periphery. Set around this cylinder, and bearing upon its periphery, at the part where the wires are exposed, is a series of springs, made of rolled brass. These springs are affixed to the back board of the commutator, and they number double the number of the groups or sections of clocks or time indicators intended to be worked by the regulator clock. These springs are used in pairs, and each pair is connected by insulated wires with their respective time indicators. The springs of each pair are so disposed that they will both be in contact with the wires of the ivory cylinder at the same time; the one with the wire of the near disc, and the other with that of the more distant. As, therefore, the cylinder rotates the circuit will be opened through the several pairs of springs with the several indicators in regular succession, and the required impulse will thereby be given through an apparatus consisting of a pair of electro-magnets, which operate (by means of a vibrating forked arm carrying the permanent magnet) the hour and minute hands of the indicator. But inasmuch as the platinum wires transmit the one the positive, and the other the negative current, and as their position with respect to the springs of each pair with which they come into contact is alternately reversed, a positive and a negative current will be alternately transmitted to the distant time indicator.

Several handsome clock faces, placed in connection with a single regulator, have been erected in the several offices of Messrs. Newton, Chancery-lane, and work satisfactorily. The dials are 18 inches in diameter, and excellently finished, yet they can be supplied at 40 frs. (1*l.* 12*s.*) each; and as the sole connection between the working parts and the exterior is by the conducting wires, the whole could be hermetically closed, and be made to work without attention for years. The sole interference with the existing telegraphic arrangements would be, that an additional wire, or one of those at present existing, would have to be appropriated to the clocks; but one wire suffices for any number of timekeepers, and for any distance. The invention is one which will, doubtless, be extensively adopted as soon as its merits become more generally known, and one which cannot fail to prove of enormous value to railway companies, as well as to everyone who appreciates punctuality.

REPORT FROM MONMOUTH AND SOUTH WALES.

DEC. 13.—Christmas is fast approaching, and yet there are no signs of any immediate improvement taking place in the Iron Trade of South Wales; on the contrary, business has become more and more depressed of late, so that many makers have been compelled to still further curtail operations, and at Cyfarthfa Works Mr. Crawshay has had three of his furnaces blown out, which will prove a heavy blow to the working classes and tradesmen of the neighbourhood. In addition to the difficulties Welsh masters have to contend with—in the existing high rate of wages, the extreme languid state trade is placed in, and the unremunerative prices their products fetch—a new deterring element, which for some time past has been gradually developing, has at length presented itself, and foreign competition is now brought to our very doors, and that, too, for the less costly descriptions of railway iron. The competition of the Belgian ironmasters has made itself manifestly felt in this district within the past fortnight, as it has succeeded in taking hence a large order for upwards of 40,000 tons of railway iron on Russian account. The success of the Belgian makers is generally considered to be exclusively owing to the advantage they possess in the shape of wages, and many lay the blame of the loss of the above-mentioned order to the crotchety conduct of a large maker in this district, who in July last gave in his adhesion to the notice for a reduction, and afterwards refused to carry it out; thus causing it to be withdrawn. This climax to the untoward circumstances already existing is sufficient to make the most hopeful despair; but Welsh makers, having passed through more trying ordeals, still look forward sanguinely towards the future, holding firm to the saying, that "after a storm comes a calm." The general opinion is that the demand will not resume its wonted activity till spring has made its appearance; but there are some parties, of much experience, who consider that a change for the better in the placing of orders will most likely take place shortly after the Christmas holidays. The quantity of iron cleared out on foreign account is about an average, America taking by far the largest tonnage. During the past week two or three contracts have been placed from the Northern and Southern States, the demand keeping steady. There is a fair enquiry from Canada and the provinces of British North America; but owing to the unsatisfactory state of affairs in Mexico business with that country has been greatly checked. A tolerably fair trade is being done with the Egyptian markets, and the future prospects in connection with India and South America are a little more encouraging. No alteration has taken place in the Continental demand. There is a slack sale for pig-iron, and enquiries are confined to cold-blast makes of repute. Orders for Tin-Plates come in slowly, and quotations tend in favour of buyers. There is a brisk demand for Steam Coal; proprietors' books are well filled with orders, and never was the output at the various collieries greater than at the present time. The only cause of complaint is the scarcity of skilled hands at many of the works, which is a fortunate thing for numbers of the iron miners recently thrown out of work. New collieries are being opened in all directions, and operations taken to sink to the lower measures. The quantity sent inland has visibly increased of late, and the trade would be still more largely developed if there were a sufficiency of railway accommodation. House Coal is in better request, the approach of colder weather most favourably affecting the coasting demand, as well as the local consumption. The Cwm-Bach Colliery, belonging to Mr. J. Thomas, near Swansea, which was recently opened, is now in full operation.

On Monday, as several Irishmen were engaged in blasting at the Cyfarthfa limestone quarries, the charge, either from inexperience or recklessness, suddenly exploded, and two men were killed, and one seriously wounded.

The proprietors of the Dinas Colliery have, after eighteen months' operations in sinking the middle pit, struck the 4-feet vein. The middle pit was sunk in consequence of there not being a sufficiency of air supplied to the lower pit, which is now working the 4-feet steam coal, on account of the smallness of the shaft. It is about a quarter of a mile from the lower pit, which was formerly used to work the No. 3 vein, to the steam coal, and will be the principal working shaft; the present working shaft, the lower pit, being converted into an air pit. The 4-feet vein was struck at a depth of about 360 yards. It is 4 feet 8 inches in thickness, and of excellent quality, and about 2 feet below is found the usual accompanying engine vein, about half a yard thick. The top is very good. It has been decided to continue the sinking in search of the 6-feet and 9-feet veins before commencing to work the coal.

The managers of the Great Western Colliery, near Pontypridd, having endeavoured to introduce a plan, which is adopted in Staffordshire and other English coal districts, of hiring the men at so much per day, and setting a stated number of trams for them to fill in that time, the workmen sought the opinion of their fellow-workmen employed in the Rhondda Valley, and the result was the holding of a public meeting, which was largely attended, and nearly the whole of the collieries in the valley were represented. The system which has hitherto existed in working the coal is to pay the collier for the cutting of it by the ton, or by the yard, according to the place he has to work in. Several of the men addressed the meeting, and the prevalent opinion was that the proposed method was an innovation, which ought to be resisted. The objections to it were founded upon the three following considerations:—1. That in this district it will require two men, working by the new plan, to cut as much coal as one man could under the present system, which allows the employment of boys.—2. That old men and youths, not being able to accomplish the task, will be thrown out of work, or set to less remunerative labour.—3. That in the places where colliers work under this system it is easier to cut the coal than in this valley. It was unanimously resolved that the proposed system should be opposed; and that if the managers of the Great Western Colliery persisted in enforcing it, the workmen should give them immediate notice that they would not work under it.

A vacancy occurred in the Swansea Town Council by the death of Mr. J. R. Tripp, who had filled the office of alderman for many years, and was well known throughout South Wales as an able legal advocate and public notary. The aldermanic vacancy was warmly contested by Mr. Charles Bath, a junior member of the well-known firm of H. Bath and Sons, copper ore merchants, and Mr. W. Richards, architect, brother of Mr. E. M. Richards, of the firm of Dillwyn and Richards, Landore Silver Works. On Wednesday the election took place, when it was found that the Town Council was so equally divided that, previous to the meeting, Mr. Bath and Mr. Richards determined on deciding the question in a novel manner—by the toss-up of a coin. This was actually done. Mr. Richards won the toss, and was subsequently elected without opposition to fill the aldermanic chair.

The Avon Vale Tin-plate Company commenced operations at their new works, at Margam, last week. Mr. Jenkins, managing proprietor at the Margam Tin-plate Works, assumes the management, and will be succeeded by Mr. Davies, from the Cwm Avon Works.

It appears, from an explanation which has been given in the local papers, that illness, and consequent inability to attend to his official duties, has been the cause of the cessation of Mr. Bonell, the postmaster of Swansea, and the placing of an officer in charge from the General Post-office. The growing importance of this district renders it imperative that a first-class person should be at the head of the postal arrangements, and it is to be hoped, whether Mr. Bonell resumes or not, that these claims will not in any way be overlooked at head quarters. It cannot be doubted that the intelligence of the officer in charge will lead him to report fully and impartially on the matter.

The arrivals at Swansea include—Ernest and Maria, from Seville, with 140 tons of copper ore to order; the Joseph Thompson, from Gatico, with 590 tons of copper ore for H. Bath and Son; St. Nicolas, from Requejada, with 140 tons of zinc ore for Mr. Stadler; Bonnie Marie, from Redon, with 180 tons of iron ore for W. Crawshay; Jeanne D'Arc, from Requejada, with 138 tons of zinc ore for Mr. Stadler; Zehlima, from Chili, with 523 tons of copper regulus, and 185 tons of copper ore, for Cobre Mining Company; Dauntless, from Tiltcorre, with 163 tons of copper ore for H. Bath and Son; and the Prudent, from St. Malo, with 140 tons of zinc to order.

THE BRISTOL MINERS UNION.—A meeting of the colliers of the Kingswood district was held, on Saturday, at the Crown Inn, St. George's, for the purpose of forming a branch in connection with the General Miners' Association, through a lock-out at the Ashton Vale Colliery. There was a good attendance, and a resolution was passed, pledging the meeting to join the Union, and further its cause.

TRADE OF THE SOUTH WALES PORTS.—The following are the returns of the exports and shipments at the South Wales ports during the month of November this year and the corresponding month of 1865:—

EXPORTS OF COAL.	Nov., 1866.	Nov., 1865.
Cardiff .....Tons	166,850	Tons 120,118
Newport	34,857	21,680
Swansea	53,868	35,645
Llanelly	8,451	7,075
SHIPMENTS COASTWISE.	Nov., 1866.	Nov., 1865.
Cardiff .....Tons	81,041	Tons 72,287
Newport	65,510	48,200
Swansea	19,672	18,271
Llanelly	13,773	14,716

Cardiff also exported 14,584 tons of iron and 5577 tons of patent fuel; Swansea, 390 tons of iron and 9108 tons of patent fuel; and Newport, 2053 tons of iron.

SIR,—One of your correspondents lately, in writing an article on the re-opening of the Treforest Tin-plate Works (late Mr. Crawshay's), near Pontypridd, called the same erroneously the "Upper Forest Works." There being a tin-plate

works under the latter name near Swansea, the proprietors thereof, Messrs. Hallam and Co., are desirous that the error should be corrected by myself, as manager of the Treforest Works, to prevent any confusion, as they have a brand called the "Upper Forest," and a letter from Glasgow has already been delivered to them (consequent upon the announcement in the *Mining Journal* referred to) that was evidently intended for the Treforest Works.

Treforest Tin-plate Works, Dec. 12. H. GRIFFITHS.

FOREST OF DEAN.—Activity is the chief characteristic just now in this district, both with regard to colliers, miners, and furnacemen, who in all instances are making full time; indeed, some are making overtime. Masters and men, indeed, seem to vie with each other in their general prosperity. In addition to the numerous collieries and other manufactories of the district, there is a large quantity of tin made at the Lydney Works, belonging to Messrs. Wm. Allaway and Sons; at Parkend Works, the property of Mr. Thos. Allaway; and at Lydbrook, by Messrs. Allaway and Partridge. In this department of the Forest of Dean product the preceding month has been somewhat unfavourable, although the men employed were kept fully at work: it was more cheering on Wednesday, on which day some good American orders came to hand at the Lydney Works. At the three places there are about 800 men employed—Lydney 400, Parkend 200, Lydbrook 200; at the first-named place 1000 boxes is the average make per week, Parkend 600 to 700, and at Lydbrook a similar quantity. As stated last week, the iron is chiefly obtained from the Forest, the quality being Nos. 2 and 3, instead of No. 5, as previously reported. The best quality plates, IC, realise at the works 29*s.* The wages are good; the better hands earn from 2*l.* to 2*l.* 10*s.* weekly. The chief trade is home, Scotland, and America.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

DEC. 13.—At Staveley and Clay Cross the collieries are not at all full-handed, but there is every appearance that the trade will not be entirely driven away from those places by the Unionists. Already a strong reaction has set in, and many of those who joined the Union have retired from its ranks, not wishing to face the winter in a tent, or live upon half-rations, at the request of those who have not to do so. The advice given by a well-filled stomach to a "brother" not to do as he does, but to be content to be half-starved, is not likely to be followed by the miners in Derbyshire. During the past week the secessions have been numerous; the officials of the non-union society at Staveley state that the numbers who have agreed to be free of the Union have advanced from 500 to nearly 700. From Cornwall also a considerable number of men and their families have arrived, and, notwithstanding the indefatigable exertions of those enterprising commercial travellers of the Miners' Union, who are now "starring" it in the principal Cornish towns, addressing the miners, and showing them that it is to their advantage to stop at home and starve rather than be well fed and housed, their advice and efforts appear likely to be thrown away. There can be little doubt that we shall have a large importation of the Cornwall men into the district, and which, combined with the "second thoughts" of the old men, will ensure the pits being again full-handed, and plenty reigning in the place of extreme poverty. In Sheffield the trade remains unsettled, the only business of any note worth commenting on being that there is a fair demand for the finer brands of steel, makers of Bessemer in particular being fairly off for orders. Steel crank-axles and tyres of the same material are also in good request. The Iron Trade in South Yorkshire is by no means altered, and it is said that one or two rather large establishments are likely to close their works this week for the remainder of the year. Ironstone is getting scarce, and one firm, at least, is importing from other parts of the district.

The trade in Lincolnshire keeps up, and the furnaces in blast are kept fully going. The coal trade in the early part of the week was in its usual active state, but the rumour which spread on Wednesday that the Oaks Colliery was on fire has entirely closed nearly every pit in the district. Unfortunately, the rumour was too true, and the fact that upwards of 360 men and boys have been killed has had the effect of keeping the men idle. The sacrifice of life has been the greatest on record in the history of mining in this country. To-day the mining engineer, with Mr. C. Morton, the Government Inspector, were for upwards of seven hours in consultation as to the best means to be adopted in recovering the bodies and extinguishing the fire raging in the pit. The general opinion seems to be that the same course which had to be carried out at Lund Hill in 1857, and still more recently at Edmund's Main, will have to be adopted—the filling of the workings with water. That mode will, however, be very costly, as the workings are very extensive, extending in one direction upwards of two miles. The decision of the engineer will, it is understood, be made known to-morrow. Amongst the sufferers is Mr. Parkin Jeffcock, of Sheffield, a member of one of the wealthiest families connected with coal mining in South Yorkshire, who ventured down the shaft to-day in the hope of aiding in recovering some of the bodies. It is needless to say that the sad catastrophe has cast the greatest gloom over the district, and a long time will indeed elapse before it can be forgotten.

An improved double machine-puddling furnace, the invention of Mr. J. Griffiths, of Sheepbridge, near Chesterfield, has just been set to work at the Northfield Ironworks, Rotherham. The first two heats were made in 3 hours 10 minutes, with 14 cwts. of coal. Charge: Pig-iron, 1 ton 2 cwts., long weight; puddled bar produced, 1 ton 11 lbs. The bars produced were considered to be superior to those made by hand with the same material, being much more fibrous. The furnace-grate is 4 ft. 3 in. square; body of furnace from one side to the other, 6 ft. 10 in.; from fire-bridge to flue-bridge, 7 feet. A single machine-furnace, on the same principle, at the Perseverance Ironworks, Leeds, is working most satisfactorily.

FATAL EXPLOSION NEAR BOLTON.—On Monday an accident, resulting in at least one death and several severe injuries, occurred at Mr. John Wright's Bank Pit, Little Hulton, near Bolton. At the time of the accident some of the men employed during the day had ascended the shaft, but 21 men and boys were at the pit-eye, waiting to be wound up. Whilst they were there a fall of roof occurred near to where they were standing; and the gas, of which this mine contains a large quantity, quickly accumulated in the hollow of the roof from which the earth had fallen, and immediately exploded. The current of air was so strong as to almost put out the light. It drove the fire along the passage where the men and boys were standing, in the direction of the up-cast shaft. As quickly as possible the men were taken to the surface, and they were all got out within an hour's time. They were very badly burned about the head, face, and upper parts of the body.

THE OAKS COLLIERY EXPLOSION.

In the sadness and sorrow which invariably accompanies a colliery explosion, and the confusion necessarily prevailing, it is almost impossible to ascertain either the probable extent of the calamity, or the cause to which it should be attributed—all being, of course, fully occupied in the effort to recover the bodies, with the hope—sometimes very faint, it is true—that life may not in all cases be extinct. The Oaks Colliery is situate at Hoyle Mill, about 1¼ miles from Barnsley, and it is supposed that at one o'clock on Wednesday, when the explosion occurred, some 360 men and boys were in the pit, nearly all of whom have been sacrificed. The pit is about 270 yards deep, and the workings, which have been carried on for many years, are very extensive; occuping an area, in fact, of about three square miles. The pit was considered to be well ventilated—the most approved systems of ventilation having been introduced, almost regardless of expense, by Mr. Dymond, the managing partner, who is a practical mining engineer of considerable experience.

The Oaks is worked by Messrs. Firth, Barber, and Co., and has before been the scene of severe explosions, but nothing approaching this in extent has occurred either in the South Yorkshire or any other district. Some variations from the usual South Yorkshire system were made in the working and ventilating, but—at least until the accident happened—these were generally acknowledged to be improvements. The pit is provided with three shafts most favourably placed, the two downcasts, near the railway, being within a few yards of each other, and the upcast fully a quarter of a mile distant. The downcasts, moreover, are well on the dip, and the upcast on the rise, so that no complaint could be made of want of judgment in placing the shafts. From the downcasts the engine plane runs well into the workings, and from this the benks are thrown out. To say more than this of the workings and ventilation until the plan can be given would but lead to confusion and error. As in all similar cases, the facility for obtaining volunteers to descend was enormous, reflecting the greatest credit for courage and humanity upon the colliers in time of calamity. Six were called for, and more than a dozen were instantly at the manager's command, and later the call for "another forty" brought three times the number in a moment, and many of these, be it remembered, were men from neighbouring collieries, brought thither by the report of the explosion, and altogether unconnected with those whose lives they sought to save.

At first it was believed that the explosion had not fired the coal, and hopes were consequently entertained that some might still be recovered capable of restoration. At 9 o'clock on Thursday morning, however, a second explosion occurred, and this was followed by another an hour afterwards, which caused all hope to cease, the ventilation being reversed. By these latter catastrophes 28 of the explorers were sacrificed; and whatever may be done for the widows and orphans of those lost by Wednesday's explosion, those left by the brave fellows killed whilst on their errand of mercy should receive even more consideration. Up to Thursday morning about 76 men and boys had been recovered, about one-fourth of these being alive. The workings of the north side of the pit appear to be entirely destroyed. The south side of the pit, in which district it is probable the main explosion occurred, had not been explored. Amongst the explorers lost are—Mr. P. Jeffcock, C.E. and M.E., of Sheffield; Mr. Smith, the manager of Lund Hill Colliery; Mr. David Hewitt, steward; Mr. W. Barker, underviewer; Mr. C. Siddon and his son, deputies, of the Oaks; and David Stewart, William Sugden; Thomas Nadin, fireman; and William Stephenson, fireman. Immediately after the second explosion a man named Dawson volunteered to descend to look after the exploring party, but before the necessary preparations could be made the third occurred, which rendered further efforts almost useless. By about noon it had been ascertained that 28 searchers were lost, and operations were temporarily suspended, and a consultation of viewers held. Mr. Dymond and Mr. Brown, M.E., have been almost continuously in the workings since the explosion.

BARNSLEY, FRIDAY *(by Telegram)*.—The inquest on the bodies was formally opened to-day. Mr. Morton, Government Inspector, said it was his opinion, and that of the most eminent mining engineers on the spot, that the existence of standing fire in the mine was more than probable, in which case it was impossible anyone could be alive in the pit. They were, therefore, of opinion that to prevent the sacrifice of other lives an interval of three days should be allowed before further search should be made. The inquest was, therefore, adjourned until Thursday.—Later accounts state the flames are blowing out of the mouth of the drawing-shaft, in which the woodwork has taken fire. The Queen has telegraphed her regret to hear the extent of the calamity, and subscribes 200*l.* for the relief of the families.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

DEC. 13.—The Iron and Hardware Trades of this county continue much as last reported. The question of reducing prices and wages has been much discussed at Wolverhampton and Birmingham yesterday and to-day, and the general feeling appears to be in favour of each reduction, but the course which will be taken at the meeting on the 27th inst. is as yet uncertain. There are many connected with the trade who strongly insist on the necessity of reduction, in order to keep the trade in the district; and, in point of fact, the cases in which the trade list of prices is obtained are very exceptional. It is, however, by no means certain, and many say it is unlikely, that this course will be taken, Perhaps next week opinions may be more matured. At present it is a mere matter of discussion. Manufacturers cannot afford to sell lower with wages at the present rates, and a reduction of wages, with the men's Unions to face, requires unanimity of action; and it is on the question whether this can be relied upon that the course to be taken mainly turns.

The letter in Tuesday's *Times* of Mr. H. Herries Creed, and Mr. W. Williams, jun.—the latter the honorary secretary of the South Staffordshire Ironmasters' Association—on the competition of Belgium and France in the manufacture of iron, will naturally be read with considerable interest. It appears to be only a preface to what we are to get, and it is rather remarkable that they should have sent the introduction so long before the actual report. The statements as to the competition of Belgium and France with this country in producing iron have frequently been made, more especially with reference to the former country. So far as regards the importation of foreign iron into this country, the Board of Trade gives the information that there were imported in the first ten months of each of the last six years the following quantities in bars:—

1861	Tons 27,951	1864	Tons 39,861
1862	33,182	1865	35,621
1863	36,216	1866	49,013

This certainly shows a continual (with one exception) and a rapid increase in the importation. Taking our own exports for the same periods, the total of bar-iron was as follows:—

1861	Tons 215,333	1864	Tons 243,707
1862	251,355	1865	205,680
1863	275,281	1866	225,771

Comparing the extreme periods in each case, we find that whilst the exports increased only 4½ per cent., the imports increased 75 per cent., a result which goes a good way to confirm the statement of the writers. Looking to the fuller annual statement of the Board of Trade for 1864—the latest within reach—it appears that the bars imported in that year amounted to 53,918 tons, of which 46,812 tons came from Sweden, and only 2615 tons from Belgium, and the prices at which they are entered are, in the former case, 11*l.* 9*s.* 1*d.*, and in the latter, 11*l.* 10*s.* 3*d.* per ton, showing apparently that in each case it is charcoal iron. From the same report it appears the importations of wrought-iron and steel, in all kinds of articles, amounted in value to 331,514*l.*, which were thus derived:—From Holland, 82,185*l.*; Belgium, 72,209*l.*; France, 45,485*l.*; and what seems singular, from the United States, 83,192*l.* Taking the five years, it seems that the imports of these wrought-iron and steel articles increased rapidly. They were as follow:—

1860	Cwts. 47,929	1863	Cwts. 106,046
1861	64,603	1864	202,334
1862	67,943		

Unquestionably these statistics are of a nature demanding attentive consideration, for they seem to show that we are actually increasing our importations of articles of wrought-iron and steel at a very rapid rate, more than quadrupling them in four years. We shall look with interest to the future communications of Mr. Creed and Mr. Williams. The tendency of their observations is to show that the strikes in the iron and other trades have caused the results indicated, and there may be some truth in this. It is not a mere question of the rate of wages paid, there is also a very serious loss from a wages dispute, and, beyond loss, there is the uncertainty which disinclines capitalists to risk further expenditure. There is, however, another aspect to the question. Wages are, it seems, rising on the Continent as well as here, and they must soon ascend to the level, or nearly to the level, of wages in England, and as soon as that is the case the difficulty will, to a great degree, be redressed.

There is another question which is very important to the whole country, and especially so to South Staffordshire—the question of the better education of the workmen. There is too much reason to believe that many yet look with an unfavourable eye to the too great extension of education, but in truth they cannot, if they would, hinder workmen from combining, or from discussing the question of wages, and the only course open is to render that discussion, and the action taken upon it, wiser, by increasing the general education of the men. Again, Messrs. W. Bird and Co., the well-known iron merchants, call in question the superior skill of the British workmen. However this may be, South Staffordshire can never hold its ground except by the constant improvement of its productions. It cannot compete in making low-priced iron with places where the ore is cheaper, and the port close to, and must more and more look to special quality and special makes, requiring superior intelligence in the workmen and the foremen for the maintenance of its position. To secure this it should look more to the improvement of the education of the mass of the children of its working population.

The amalgamation of the Old Park Works of Messrs. Lloyd, Foster, and Co., Wednesbury, including their extensive coal mines, with the Patent Shaft and Axle-Tree Company, of that place, was agreed to at a meeting of the shareholders of the latter company, at Birmingham, yesterday. The purchase-money is 300,000*l.*, and it was stated that for several years the works had realised a profit of 70,000*l.* a year. Messrs. Lloyd were to take 50,000*l.* shares, and they had been anxious to take more, but the directors of the Patent Shaft Company would not assent to it. They are to pay a premium of 4*l.* per share on a part of those they take. Mr. Sampson Lloyd is to continue to act as manager of the Old Park Works, and is to be the vice-chairman of the company; Mr. T. Walker, the late proprietor of the Patent Shaft and Axle-Tree Works, being the Chairman. As stated some time ago in this letter, one of the reasons which have led to the purchase of these works by the Patent Shaft Company was the necessity of securing a means of producing Bessemer steel, which the Old Park Works possessed, but the Patent Shaft did not. It is, perhaps, hardly necessary to say that the Old Park Works produced not only wheels and axles, and iron railway wagons, but iron bridges, rails, and various sorts of iron, and the concern as amalgamated is now one of the most gigantic in the kingdom. Some slight objections were raised to the purchase at the meeting, but in the event it was approved with scarcely a dissentient voice.

The decision in the case of the North Staffordshire Coal and Iron Company (Limited) *v.* Macintyre, that the defendant is not liable to pay calls on the shares allotted to him, on the ground that he had been induced to offer to take them by misrepresentation will, it may be hoped, make promoters of new companies more careful in the statements they make in prospectuses for the future. The abuse of the Joint-Stock System has been fearful, and some time will elapse before the public will look with favour on such enterprises.

At the Dudley Midland Geological Society a paper was read by Mr. T. Parton, of Willenhall, on "The New Mine and Fire-Clay Coals of the South Staffordshire Coal Field, their produce, modes of working, extent, geological pecularities, and probable duration." The chair was taken by Mr. Henry Beckett, F.G.S., who congratulated the society upon the valuable practical information contained in papers similar to the one they had just listened to. The paper combated the erroneous views held by many persons on the duration of the coal field, and gave valuable statistics proving that an enormous amount of what is termed inferior and profitless coal, is only a reserve, which, in the future, is doomed to supply the demand as the supply of the superior coal becomes exhausted. It was proposed by the Chairman, and carried by the meeting, that the paper should be printed in full in the Transactions of the society.

THE TALK-O'-TH'-HILL COLLIERY EXPLOSION.—Only a few hours after the fearful explosion at Barnsley, another, of almost equal magnitude, occurred at the Talk-o'-th'-Hill Pit, near Kidsgrove, North Staffordshire. The workings are situated at a depth of 300 yards, where the Banbury or Gas-Coal seam is wrought. The seam was known to be fiery, but it was considered that all necessary precautions to prevent casualties had been taken. When the examination of the pit could be made, it was found that only 50 of the men had escaped unhurt; and up to Thursday evening 36 dead bodies and 13 injured men had been brought up, leaving, as it was supposed, about 50 still in the pit. The most strenuous efforts are being made to restore the ventilation, and it is hoped that at least some of the men may still be saved. The immediate cause of the explosion has not been ascertained, and, as it appears to have been the rule of the colliery to use locked safety-lamps exclusively, it is the more difficult to account for it.

REPORT FROM NORTHUMBERLAND AND DURHAM.

DEC. 13.—The year is now drawing to a close, and the period when contracts for the supply of collieries with materials, and also for the supply of coal, terminate; the renewal of those contracts becomes a matter of much importance. With respect to the materials consumed by collieries, they are, on the whole, at present reasonable; oil and some other stores are high in prices, but iron and other things are rather low. With respect to the contracts for the supply of coal, the consumers are somewhat anxious to conclude contracts for the ensuing year, therefore the prices of coal and coke may be expected to be well maintained, if not slightly increased. The demand is certainly improving, as might naturally be expected from the change in the state of the iron trade. The quantity of coal produced in 1867 will, probably, much exceed that of 1866 in these two counties, as many extensions and new sinkings are in progress; one of the most important of which is that in progress at the celebrated Wallsend Colliery. This sinking is now making rapid progress. When those works are in full operation, as well as others in connection, a large increase in the output of coal may be looked for on the Tyne; it is thought that these works alone will produce 300,000 tons per annum of marketable coal for upwards of half a century. With respect to the Iron Trade, it continues very quiet, not to say dull, and large stocks of pig-iron are to be found at many of the works, and the prices have ruled very low lately. However, the starting of the mills and forges has caused a movement to take place for the reduction of those stocks, and makers have in some cases received better prices; it is hoped, also, that an increase in the demand will shortly take place, which will lead to some general improvement.

The subject of machine ventilation of mines continues to attract much attention here, and one of Lemielle's large pneumatic fans or pumps, with wings, was, we are aware, ordered for a South Durham colliery on Saturday last. At present, two of Guibal's machines for ventilation are at work, one at the Elswick Colliery, near Newcastle, and one at the Pelton Fell Colliery, but Mr. Lemielle's improved machine, with wings, is expected to give better results than that of Guibal's. It is satisfactory to find that the subject of machine ventilation is so soon to be elucidated by actual experiment in this locality, as the comparative merits of furnace and machine ventilation will thereby be satisfactorily shown. The only system of ventilation which has hitherto been successful in this district is that by furnace at the bottom of the upcast-shaft. An attempt was made a few years ago to introduce the steam-jet, but that was a failure. However, the machine promises well, and is, doubtless, calculated to succeed to some extent.

NORTH OF ENGLAND INSTITUTE OF MINING ENGINEERS.

A general meeting of this society was held at Neville Hall, Newcastle, on Thursday last, which was numerously attended. In the absence of Mr. T. E. Forster, the President, the chair was taken by Mr. J. L. Bell. Several new members and graduates were elected, and the society is prospering and rapidly increasing in numbers.

A paper was read by Mr. W. Lishman "On a System of Working Coal on the Long Wall Plan." The paper will be read with much interest, as it treats of a subject of great importance in connection with coal mining, and the paper is well illustrated by diagrams. An interesting discussion may be expected to take place on this important subject at future meetings of the society.

The expected discussion on the paper of Mr. A. L. Stephenson, "On Certain Experiments with Mr. Guibal's Fan Ventilator," was postponed until next meeting, when a discussion of much interest may be expected on this subject.

Some discussion took place on Mr. Cochrane's paper "On Harrison's Cast-iron Boiler." The conclusion arrived at by Mr. Cochrane does not appear to be favourable to those boilers. He has had them erected and at work for some considerable time at the Elswick Colliery, but has discontinued them for the present.

PRESENTATION TO THE NEW MINES INSPECTOR.—There was a goodly gathering of the agents and workmen of Charlaw, Sacriston, and Nettlesworth Collieries on Saturday, at the house of Mr. Cleughan, Sacriston, to do honour to Mr. Albert Verner, who has acted as viewer to those collieries for some time past, but who has now left, in consequence of his appointment as Government Inspector of Mines in the place of Matthias Dunn. Upwards of sixty persons sat down to supper: Mr. Thomas Fowler, of Nettlesworth Colliery occupied the chair, and Mr. Robert Oliver, of Charlaw Colliery, the vice-chair. Mr. M. Robinson, of Sacriston Colliery, in making the presentation to Mr. A. Verner, said that Mr. Verner had always pursued his profession with perseverance and industry, and the fact of his having now been appointed to the responsible position of Government Inspector of Mines was proof that he had not been unsuccessful in his career. During the eighteen months that Mr. Verner had acted as viewer in their midst, he had always been ready to listen to any suggestions or complaints that might have been made by the workmen respecting colliery matters, and had given entire satisfaction to all concerned. Mr. Robinson concluded by presenting Mr. Verner with a handsome silver tea pot, from the establishment of Messrs. Reid and Sons, Grey-street, Newcastle, upon which was the following inscription:—"Presented to Albert Verner, Esq., by the agents and workmen of Charlaw, Sacriston, and Nettlesworth Collieries, as a token of their respect on his leaving for a superior appointment, Dec. 8, 1866." Mr Verner begged them to accept his most sincere thanks for the very handsome testimonial with which they had presented him. He regarded that testimonial as a token that the men had been satisfied with his conduct towards them, and it was not always an easy task to stand between masters and men, but he had always made it a point to lay before and recommend to the owners everything that the men could show him would tend to their safety and the interests of the collieries. He trusted that the same good feeling and prosperity that had prevailed during the time he had been amongst them would continue in the future.—*Newcastle Daily Chronicle.*

REPORT FROM SCOTLAND.

GLASGOW, DEC. 12.—With a slightly speculative demand for Pig-iron this week prices have hardened, and we close with 9*d.* per ton advance on this day week. There is some fear that the opening prices of the year, with the supposed reduced stock, will be against buyers, and a few purchases are said to have been made with the view of holding for a rise. The shipments also indicate as much, as with a fair business done they have only reached 8125 tons this week, against 12,140 tons in the corresponding week of 1865. To-day a considerable business was done at 54*s.* 7½*d.* and 54*s.* 9*d.* cash, 54*s.* 10½*d.* a month; No. 1, g.m.b., 55*s.* to 55*s.* 3*d.*; No. 3, 54*s.* 9*d.* to 55*s.*; Gartsherrie, No. 1, 60*s.*; No. 3, 55*s.*; Coltness, No. 1, 65*s.*; Glengarnock, No. 1, at Ardrossan, 62*s.* In Malleable Iron next to no business is being done, the Welsh makers offering every description of manufactured iron at prices so unprecedently low that Scotch makers are positively excluded from the market. Ironfounders are not busy, and the few orders they have in hand will not much more than suffice to keep them going to the end of the year. The Glasgow Water Company wish contracts for pipes, but the whole specification is a mere bite. Coals keep in fair demand, with declining shipments, the quantity for the week just ended put on shipboard being only 18,335 tons, against 29,520 tons in the same week of last year. Some of the Iron companies are already reducing the wages of their colliers, and others are about to follow, the state of the trade not justifying the present rates. Numbers of Cornish miners continue to arrive, and get employment at once. The localised miners, on the other hand, are suicidally persevering in making Thursday an idle day, and seem as disinclined as ever to go in for a full week. In Lord Belhaven's pits, in the Wishaw district, the men have broken away from the Union short time arrangements, and are working what is called full time, which includes a half holiday on the Saturday, and a half day on the Monday after the pay. This is a beginning, and with the Cornish men ready to give a week's work when wanted, the miners will hardly continue much longer to refuse to work full time.

[ADVERTISEMENTS.]

From Messrs. WARD and JACKMAN:—We have, from good authority, advices of an active business in mining shares in Cornwall; indeed, the orders that we alone have received have been on the increase for some days past. This shows that many of the mine shareholders in the county are taking advantage of the pressure of the times to augment their holdings in sound progressive and dividend stocks. Cornishmen know full well that the fall in the price of ores can be but temporary, and that when the prices of metals again advance, the prices of shares will assuredly go with them. We wish to impress on our friends in other parts of the kingdom the wisdom of following their example, now that many of the most desirable mines in Cornwall and Devon may be bought in many cases at one-third of the original outlay. The advance in the standard for copper, announced this week, of 1*l.* 12*s.*, although small, has caused more confidence in many mines which before were flat; to say the least, it is a move in the right direction. We gather the following from our correspondents:—AT EAST CARADON, the 90 east has improved, and is now worth 8*l.*; the total value of ends is computed worth 52*l.* per fathom. EAST PROVIDENCE, from its immediate contiguity to the celebrated Providence Mines, and, moreover, having the productive lodes thereof, may be regarded as a property in which it would be safe to invest. The works commenced ten years since, and nearly 20,000*l.* have been expended; the shareholders have displayed great patience, which, from the present favourable appearance of the mine, bids fair, at no distant period, to return them good profits. The mine is very energetically managed by Mr. Thomas Hollow, of Penzance, and whom we have always found most courteous in giving any information respecting the mines he so ably conducts.

It appears it has been decided not to accept the Milton Willis and Knowlton gold claims for the MINERAL RIGHTS ASSOCIATION, but Mr. Phillips states that

before leaving California he shall try to obtain a provisional contract for some property, "which will at once commence to pay dividends." We think, without doubt, that there are many mineral districts in old England where the sound of the pick and gad, perhaps, have not yet been heard but in a few spots, yet its hills teem with metals that will at a future period reward the hand of industry, and extend the manufactures of our own country, that the Mineral Rights Association might secure, and which would well repay the capital invested. We have in a recent article advocated the desirability of capitalists visiting all new concerns, as a rule, before investing, the mining districts being, in general, of the most romantic and picturesque character. No doubt it is "very so" in California also, but we beg to state we did not intend to include the mining districts of that country for our clients to take an excursion to. Indeed, what would Mrs. Capitalist say?

At NEW TAMAR SILVER-LEAD MINE, the lode in the 10, driving south, is still worth full 9 cwts. of rich silver-lead ore per fathom; and the lode in the rise in the back of this level is opening out well, and is at present worth 8 cwts. of rich silver-lead ore per fathom. There can be little doubt that this will make an excellent mine. The shares have changed hands this week at from 20s. to 25s.

At NORTH CROFTY MINE, the lode in the 183 end east is worth from 45*l.* to 50*l.* per fathom. The winze (now down 5 fms.) sinking under the 170 is worth from 45*l.* to 50*l.* per fm. The western stope, 40*l.* to 45*l.* per fm. The 170 east has also improved in appearance; and good stones of tin have been broken in the 196 east. At WEST CARADON, the 170 east, on Downing's lode, is improving, particularly in the bottom end; and other parts of the mine are without change.

From Mr. EDWARD COOKE:—The market has been dull during the week, but that is by no means unusual at this period of the year, when the public generally limit their operations with the view of commencing afresh in the new year. There has scarcely been a more favourable opportunity than the present for the prudent investor to lay out his capital. There are several mines in which an investment may be made with an absolute certainty of success. One of them I would draw attention to—PROSPER UNITED may be termed one of the most important mining properties in Cornwall; there are 6000 shares. A short time since the plant, machinery, &c., were valued for some retiring shareholders at 52s. 6d. per share, which were the amount the company agreed to allow them, so that the present market price is not much beyond the value of the machinery. It may not be generally known that although copper and tin are selling at half the price now that they were selling at some two years since, yet Prosper United Mines are making profits, according to the testimony of the manager, of from 400*l.* to 500*l.* per month, and a dividend of 5*s.* per share will be declared at the next meeting, in February. The reserves of both tin and copper ore are very great in the mines, and they are constantly being increased. On Thursday next the monthly sale will be 480 tons of copper ore, besides which there will be about 20 tons of tin raised in the same period. With these remarks I leave the public to judge of the merits of this fine mineral property. Instead of the price being what it is, the shares are really worth 5*l.* The sale of copper ore alluded to realised 1699*l.*, and this, with the present low standard, is a proof of the productiveness of this splendid property. The tin sale for the month, in addition to this, is estimated to realise 800*l.* to 900*l.*

PRINCE OF WALES MINE continues to improve, but the shares, owing to the large speculative account that is open in them, do not improve in the same ratio. This in no way affects the real value of the mine. I believe it to be one of the best discoveries that has been made for a long time, but until the shares become placed in the hands of *bona fide* holders, the price will not be very steady. To those who can afford to buy, and hold on for a short time, I would say buy all the shares you can, and the result will be very satisfactory in a pecuniary sense. There is every probability of cutting a good lode in the 55 fathom level, when there will be a great rise in the price of the shares. I may be supposed wrong in naming FRANK MILLS MINE as being likely again to see a prosperous career. Time will, I think, prove I am not far wrong. The shaft is down to the 145 fm. level, from which a cross-cut will be put out to intersect a junction of two lodes that have been very productive in the upper levels; and it is confidently expected that a large deposit of lead will be met with in the 145 fm. level. Above this level there are yet large reserves of lead ground standing, and new ground being opened up. A drawing-engine is being erected, which will leave the present one exclusively to crush the lead. The want of sufficient crushing power has necessitated the accumulation of a large quantity of low quality ore at surface, estimated to be worth several thousands of pounds sterling. That will soon be turned into account, and tend to increase the returns. At the meeting, on the 4th instant, the reserved balance amounted to 1640*l.* A few months will, probably, put Frank Mills Mine into a dividend state again; and seeing that the shares, which were last year 8*l.*, are now only about 2*l.*, I do not hesitate to say they are remarkably cheap, and likely to pay those who buy them now a very large profit.

CHONTALES shares have been very steady in price. While I am writing this the monthly mail is hourly expected, and it will probably bring advices from the commissioners who were sent out to thoroughly organise the entire management at the mines. My own impression is that their report will fully bear out that of the manager, Capt. Paull. He has had great difficulties to encounter, more probably than he at first contemplated, but I look forward with great confidence to his surmounting the whole of them, and to his bringing the Chontales property to a profitable and successful issue. The recent meeting of the ST. JOHN DEL REY, and the remarks that fell from the Chairman of that company, should encourage the shareholders in Chontales to look forward with confidence to the future. Some 12 months have only transpired since the manager and staff left England, and during that time from 4000*l.* to 5000*l.* worth of gold has been sent home, proving the richness of the ore-producing ground. The St. John del Rey Mines have returned about 800,000*l.* to the shareholders, upon an outlay of 165,000*l.* These extraordinary results have been realised from ore the average yield of which has not exceeded ½ to ⅝ oz. of gold per ton of ore, and in the face of very large expenditure, consequent upon the depth of the operations and nature of the ground. The produce of the gold-bearing ore in the Chontales Mines averages some 2 ozs. per ton, and, no doubt, when the machinery is erected it will be a good deal more. Although there has been delay in the erection of this machinery, I look forward with great confidence to a highly successful and prosperous future for the Chontales Company.

EAST PROVIDENCE.—This mine is now beginning to attract attention. A carbona of tin was met with in this mine some time since, which is still holding good. If this continues it is highly probable that no more calls will be required. The shares, with about 5*l.* paid, may now be bought at 20*s.* WEST CARADON shares, in sympathy with the dulness in the market, have receded in price. Those who have the courage to buy now will do well. The same remark is applicable to several other mines that are selling at ridiculously low prices. Already the standard for copper ore has taken a favourable turn, and there is every probability that both copper and tin will advance considerably in price immediately on the commencement of the new year, when a great stimulus will be given to mining operations. With all the prejudices against mining property as an investment, the public should bear in mind that the liabilities attending an investment in mining property are nothing as compared to many of the financial companies and banks. In well-conducted mines shareholders can easily determine their liabilities. I would, therefore, advise the present opportunity of investing in a few good mines to be embraced by all who have money to invest.

P.S.—Next week I shall make a few remarks upon the Caldbeck Fells Mine.

From Mr. ALBERT E. PRINCE (Cornwall Mining Exchange, Camborne):—At this season of the year it is usual for mining speculation to be dull and spiritless. We are glad, however, to observe that the markets are certainly firmer, and a stronger disposition shown to invest than was the case in the winter of 1865. Considerable gloom has been cast over this town and neighbourhood during the last two weeks, in consequence of the untimely death of Mr. Charles Cardozo. The name of Cardozo has long been well known in the mining world, and the deceased gentleman was especially respected both in London and Cornwall. CAMBORNE VEAN, ¾ to 1¼; the lode in the various levels (the 170, 150, and 135), east of Grylls' shaft, will produce about 8 tons of ore per fathom, the 135 having this week slightly improved; the winze below this level will yield 2 tons; the next (two months) sampling will be 120 tons. EAST PROVIDENCE, ¾ to 1; the lode in the 70 east contains good tinstuff; the 50 east is worth 4*l.* per fathom. In this little mine there are 14 pitches working, at an average tribute of 10*s.* CHIVERTON MOOR, 4⅛ to 4¾, with time and expenditure, will eventually do well. COOK'S KITCHEN, 6 to 6¼; CLIFFORD AMALGAMATED, 4¾ to 5⅛, should be bought. At CHIVERTON the bottom levels are opening out good, and shares in demand. EAST BASSET, 20 to 22. EAST LOVELL, 9 to 9⅛; at the next meeting of shareholders a dividend may be confidently anticipated.

DOLCOATH, 250 to 300; at the meeting, on Monday, the accounts showed a credit balance of 229*l.* 12*s.* 2*d.*, after declaring a dividend of 716*l.* (2*l.* per share); aggregate value of the different points, 306*l.* per fm. The average price per ton of tin for the two months is 2*l.* 3*s.* 6*d.* less than the two months previously, a difference equal to nearly 1*l.* per share dividend. NORTH WHEAL CROFTY, 2⅞, 3⅛; the alterations requisite in the pitwork having been completed, and plunger fixed in the 183, the mine is again drained to the 196, which level is being vigorously pushed in an easterly direction, by six men, towards the course of tin now being driven through in the 183. The engine-shaft is expected to be in full course of sinking below the 196 (sumpmen engaged in cutting plat) in three weeks. "The 183, east of Praed's shaft," says Capt. W. C. Vivian, "is producing about 1 ton of black tin per fm. (47*l.* to 48*l.* per ton), and the winze sinking under the 170, ahead of the 183 end, has improved, and is also producing about 1 ton of black tin per fathom. The stopes in the back of this level continue of as good value as they have been, and the western levels and stopes also continue as good as when reported on at the meeting of shareholders." This mine, through the indefatigable exertions of the manager and agents, in getting it to a most prosperous state. GREAT SOUTH TOLGUS, 9*s.* to 11*s.*; the account is called for the 17th. EAST ROSEWARNE: The lode at King's shaft is worth 14*l.* per fm. Two stopes in back of the 85 east are worth together 20*l.* The 85 western stope is worth 5*l.* The eastern stope, in back of the 75, is worth 6*l.* Other parts are without alteration of importance. WHEAL AGAR (managed by Captain W. Roberts, of West Basset): It will be remembered that a short time since, when shares were ⅞ to 1⅛, we referred to this mine, accompanied by a special report of Capt. W. Rowe, of Wheal Seton. Wheal Agar is opening out in accordance with our expressed views. The lode in the 140, west of cross-cut, is at present worth 20*l.* per fm. (6 feet wide); the mine throughout presents an improving appearance—shares in special request, at 1⅛ to 1¼. ROSEWALL HILL meeting, just held, showed a loss of 306*l.* 5*s.* 10*d.* on the three months, the balance against the adventurers being 337*l.* 9*s.* 6*d.*, which was carried to the debit of the next account. The mine is now divided in 5915 shares only. The valuations in the aggregate are worth from 115*l.* to 130*l.* per fathom. PROSPER UNITED is situated in one of the best tin and copper districts in Cornwall, and is likely to become a great prize. GREAT WHEAL VOR is said to be looking better west of Ivey's shaft. We shall next week refer more lengthily to the various mines.

MINERAL RIGHTS ASSOCIATION.—The directors have issued a circular to the shareholders, in which they state that Mr. J. A. Phillips has determined not to accept the purchase of the Milton Willis and Knowlton Conglomerate Gold Claims, the auriferous ground not being of sufficient extent. Mr. Phillips states that there are "things just as good as the conglomerate was represented to be, and as it would really have been had the area of the deposit been sufficiently large." From a telegram of a date subsequent to his report the directors learn that Mr. Phillips has met with a very rich property, for which he has probably made a provisional contract. Mr. Phillips is of opinion "that there is no country in the world in which money could be so safely and advantageously invested in mining property as in California, since the veins are not only highly productive, but the current rate of interest is large, and, consequently, 20 per cent. on the capital invested forms no inducement to embark in mining enterprises. He should try before leaving to obtain a provisional contract for some property which will at once commence to pay dividends."

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It will not explode from a spark or fire, but from concussion alone, and is consequently much less dangerous than gunpowder or gun-cotton.
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One charge of this blasting oil, which is now being used with wonderful effect in all the largest slate quarries in North Wales, will displace as much slate rock as four or five charges of gunpowder; and its great force, acting on a large quantity of good slate rock, shakes and displaces it at the natural joints, or cracks, without damaging the slabs nearly so much as the more numerous blasts from any other blasting material would do.
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Capital £60,000, in 6000 shares of £10 each.
Deposit £1 per share on application, and £1 further on allotment. Subsequent calls £1 per share, at intervals of not less than three months.
It is estimated that not more than £5 per share will be called up. Nearly half the capital is already taken by the directors and vendors.
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PROSPECTUS.

This company is formed for the purpose of leasing and working the minerals contained in the Onllwyn, and the Rhyddfosddu, Cefn-yr-Erw, Castell Coch, and other estates, at the head of the Dylais Valley, and situate partly in Glamorganshire and partly in Breconshire.
These properties together form a total area of nearly 1000 acres, all in a ring fence. The Onllwyn property is held for a term of 53 years, and the Rhyddfosddu, Cefn-yr-Erw, and Castell Coch Estates for a term of 39 years, at royalties of 8*d.* per imperial ton on all coal and ironstone, and proportionately low rates for fire-clay, building stone, &c. The dead rents average £1 per acre, and all the leases are determinable by three years' notice at the option of the lessees, but not by the lessors.
The Onllwyn estate consists of nearly 700 acres, and comprises in the section the Upper Four-feet coal, the Eighteen-feet, the Nine-feet, the Lower Four-feet, and other veins, making a total workable thickness of between 30 and 40 feet.
Under the whole of this property are also contained the series of argillacious ironstone belonging to the north out-crop of the South Wales mineral basin. All the seams of coal and ironstone are fully proved by existing workings, and are shown in the map of the Ordnance Survey. The coal is a pure anthracite, and is admirably adapted for smelting iron, for malting, lime burning, hop drying, and heating stoves. At present it is not largely used in this country for steam purposes, chiefly owing to the defective communications with the districts in which it is found. Recent railway extensions will, however, enable this coal to compete fairly in the markets of the world, and its extraordinary and valuable properties will now, unquestionably, become as well known and appreciated for ocean steam navigation and for locomotive and stationary engines in this country as they have long been in the United States of America. It is absolutely smokeless, makes little or no ash or clinker, evolves the most intense heat in combustion, and is unapproachable by any other description of coal for strength and durability.
From its great density and hardness, it is admirably adapted for long steam voyages. It stows in less compass than any other coal in the world, is unaffected by exposure to weather or climate, and is entirely free from all danger of spontaneous combustion or of explosion.
For iron-making purposes it is invaluable: the pig-iron smelted by this coal has long been locally celebrated, and now that through railway routes are coming into operation in the district, it is greatly in demand at high prices in Staffordshire and other parts where first class pig-iron is needed.
On this property are two well-built blast-furnaces, with six hot-air ovens, powerful blast-engine, five excellent boilers, with chimney stack, &c., complete, foundry, fitting, blacksmiths' and carpenters' shops, offices, storehouses, manager's house, stabling, and about fifty workmen's houses, all let and bringing in rental of upwards of £300 per annum.
There are also fire-brick works, clay mill, and five other steam-engines, with boilers, pumps, &c., working on various parts of the property, together with trams, weighing machines, and many miles of above and underground rail and tram-roads: also tools, plant, &c., all in use and in working order.
The Rhyddfosddu, &c., estates are of great value as ironstone properties, the ore being rich in percentage of iron, and excellent in quality, while the ground is highly productive.
This property is, moreover, so situated that the whole of the ironstone veins crop out on the hills on the east side of the vale of Tawe in such a position that for many years they will be got by open working. When it shall become necessary to drive underground, the River Tawe being 500 or 600 ft. below the top of these hills will afford free drainage for an inexhaustible tract of minerals.
The main line of the Neath and Brecon Railway intersects the Onllwyn tract; and the Swansea Vale and Neath and Brecon Junction Railway runs through the Rhyddfosddu and other properties. These railways have been promoted by the landowners in the district, and the development of these important mineral estates has been carefully kept in view in laying out the lines; the capital, consequently, which must otherwise have been expended in opening these tracts will be greatly lessened.
The Neath and Brecon Railway was opened through for goods and mineral traffic on Sept. 13, 1866. The Swansea Vale and Neath and Brecon Junction is being pushed on to the utmost, and it is anticipated that the whole system will be completed throughout during the present year.
Before the completion of these railways these estates had no means of communication other than a defective and expensive tramroad five miles in length, and supplies of limestone for fluxing purposes, &c., were only obtainable by similar means. By the completion of the Neath and Brecon line the cost of this important material will be reduced between 30 and 40 per cent.
The present owners of the property have agreed to accept £31,500 as the purchase-money, including the whole of the buildings, erections, houses, engines, machinery, and fixed and movable plant; payable one-third in cash, one-third in shares of the company, with one-half (that is, £5 each paid-up) and one-third in debentures of the company, having three years to run, and bearing interest at £5 per cent. per annum. It is anticipated there will be no difficulty in renewing these, if desirable.
It is proposed to call up on the shares issued to the public, at such intervals as may be requisite, £5 per share, thus making them paid-up to an equal amount with the shares taken by the vendors in part payment of purchase-money as above.
The present furnaces are equal to a weekly make of 140 tons of pig-iron, and it is proposed to lay out £6000 in extending the colliery openings sufficiently to supply 200 tons of coal per day for sale, the extraction having hitherto been confined to the purposes of the ironworks.
The cost and production will then stand thus:—

COST.			
Purchase-money in cash and shares, exclusive of debentures, for which see below	£21,000	0	0
Amount required for extension of collieries	6,000	0	0
Working capital	3,000	0	0
Amount of share capital to be called up at £5 per share	£30,000	0	0
Amount of debentures, interest on which at 5 per cent. is deducted from profits, as below, £10,500.			
PRODUCTION.			
140 tons pig-iron weekly, say 7000 per annum, at 7*s.* 6*d.* per ton profit	£2625	0	0
200 tons coal per day, say 300 days per annum, at 2*s.* per ton profit..	6000	0	0
Total	£8625	0	0
Less interest at 5 per cent. on £10,500 debentures, as above	525	0	0
Yearly profits	£8100	0	0

Thus showing a profit of upwards of 25 per cent. per annum, without taking into account the income from rents and other sources.
These calculations have been carefully considered and verified by practical iron-masters and mining engineers personally acquainted with the locality, and the directors are satisfied that the above estimate of profits is considerably understated.
No promotion money will be paid, nor any expenses incurred, except those which are strictly legal and necessary.
If no allotment be made, the deposit money will be returned in full.
Prospectuses and forms of application may be obtained of any of the directors, or of the bankers, solicitors, auditors, or brokers of the company; and abstracts of the leases, with plans and further particulars of the property, and copies of the Memorandum and Articles of Association may be seen on application to the Secretary, at the company's offices, No. 2, Mount-street, Swansea; or at the offices of Mr. J. R. COBB, Solicitor, Brecon; or of G. B. MURLY, Esq., Langport, Somersetshire.—Nov., 1866.

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Memorial to the late Nicholas Wood, Esq.

MEMORIAL TO THE LATE NICHOLAS WOOD, ESQ.—At a PUBLIC MEETING of the Subscribers to this Fund, held in Newcastle on the 10th November, 1866, it was unanimously resolved that the proposed MEMORIAL should be in the FORM of a HALL to be ERECTED in NEWCASTLE, for the use of the Northern Institute of Mining Engineers, to be available for all classes of the Mining Community, under the arrangement of the Council of the Institute. It was also resolved that there should be placed in this hall Busts of Mr. Wood and of others who had been distinguished in this district as Mining or Civil Engineers, &c. It is estimated that the sum required for the purpose will be from £5000 to £6000.

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Amount previously advertised	£445	14	0
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Situate in the parish of WENDRON, county of CORNWALL.
In 1024 shares of £3 each.
CONDUCTED ON THE "COST-BOOK SYSTEM."
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ABRIDGED PROSPECTUS.

The property of this company is situated in the parish of Wendron, in the county of Cornwall. The sett is in the heart of the Lovell district, and is adjacent to Old Wheal Lovell, East Wheal Lovell, New Wheal Lovell, Trevenen and Tremenheere, and Trumpet Consols.

The lodes running through the sett are a continuation of those of Old Trevenen, Trumpet Consols, and Wheal Lovell, which lodes returned enormous quantities of tin; Trumpet Consols alone returning £500,000, whilst Trevenen and Wheal Lovell each have sold upwards of £200,000 worth. As this sett occupies an unrivalled position geologically, and is undoubtedly rich in tin, as shown by subjoined reports by men of the first standing in the County of Cornwall, it presents all the elements of success, and it is confidently believed that by vigorous and economical working it will well remunerate the adventurers.

The stratum is precisely of the same character as that in the neighbouring mines; and as shown by the reports, many points of value can be driven upon at once.

The extensive "old men's" workings, seen at surface, clearly indicate that large quantities of mineral have been taken away, their workings having been extended so far as the water would allow them without the aid of machinery.

There is now on the mine in efficient working condition an excellent engine, which is capable of draining the mine to the 80 fm. level; horse-whims; account-house: carpenters' and smiths' shops; together with all the necessary appliances for carrying on extensive operations.

Upwards of £5000 has already been expended on the property, and as stated in the report of Capt. J. Nancarrow, "The mine is just now getting into working order, and its development might be commenced at once, without any outlay in machinery, and with an unusual prospect of success."

Tin can at once be returned, and looking at the present indications a very moderate outlay cannot fail to remunerate the proprietors.

No call will be necessary for at least six months.

Detailed prospectuses and forms of application for shares may be obtained at the offices of the company, 2, Bucklersbury, London, E.C.

TO MINE, SLATE QUARRY, AND RAILWAY COMPANIES.—CAPT. C. WILLIAMS is NOW OPEN to UNDERTAKE ALL KINDS of CONTRACTS, such as DRIVING LEVELS, SINKING SHAFTS, CONSTRUCTING WATER COURSES, CANALS, TRAMWAYS, &c., and ERECTING ALL SORTS of MACHINERY for MINING and OTHER PURPOSES, having on hand at all times a first-class staff of miners and machinists, who will proceed to any part of the world upon the shortest notice.

N.B.—In all cases 30 per cent. will be left in hand until the work is complete.

Tyn-y-Wern, Tallesin, via Shrewsbury.

CAPT. RICH, BODMIN, CORNWALL, being in the centre of the mining districts of Devon and Cornwall, and having had 25 years' experience in the management and inspection of mines, OFFERS HIS SERVICES to INSPECT and REPORT on MINES in either of the above counties. Orders promptly attended to.

NOTICE.—CAPT. S. M. RIDGE, of LLANIDLOES' MONTGOMERYSHIRE (late manager of the Brynpastig and Cwm Fron Mines, and others, in Shropshire and Wales), is NOW OPEN to INSPECT and faithfully REPORT UPON ANY LEAD MINE in either of these localities that may be confided to his care, having had better than 30 years' experience in lead mining, as miner and agent.—Address, Capt. S. M. RIDGE, Llanidloes, Montgomeryshire.

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Offices of the Ellen United Copper and Zinc Mining Company (Limited), and Hazael Grove Silver-Lead Mining Company (Limited). THOMAS MOLYNEUX, secretary, 28, Princess-street, Manchester

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In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the SOUTH CARADON WHEAL HOOPER MINING COMPANY.—Notice is hereby given, that a PETITION for the WINDING-UP of the ABOVE-NAMED COMPANY by the Court was, on the 8th day of December inst., presented to the Vice-Warden of the Stannaries, by John Bayly, a creditor of the said company, and that the said petition is directed to be heard before the Vice-Warden, at No. 18, Thurloe-square, Brompton, in the county of Middlesex, on Monday, the 24th day of December inst., at Twelve o'clock at noon.

Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioner, his solicitor, or agent, of his intention to do so, such notice to be forthwith forwarded to P. P. Smith, Esq., secretary of the Vice-Warden, Truro.

Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same, from the petitioner, his solicitor, or his agent, within 24 hours after requiring the same, on payment of the regulated charge per folio.

Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 20th day of December inst., and notice thereof must, at the same time, be given to the petitioner, his solicitor, or his agents.

SAMUEL CATER, Plymouth, Devon (Solicitor for the Petitioner).
F. HEARLE COCK, Truro, Cornwall (Agent of the said Solicitor).

Dated Truro, December 11, 1866.

EAST JANE SILVER-LEAD MINE, CARDINHAM, CORNWALL,
Two miles from the Bodmin-road station.

MR. T. L. TREMAYNE WILL OFFER, at PUBLIC AUCTION, in One Lot, on the mine, on Thursday, the 20th of December, the whole of the VALUABLE MINE SETT, ENGINES, PLANT, and MATERIALS of the above mine, consisting of LEASE of SETT, held under T. J. A. Robartes, Esq., at 1-15th dues.

ONE 40 in. cylinder PUMPING ENGINE, 10 ft. stroke, equal beam, and one BOILER complete.

ONE 24 in. WINDING ENGINE, with BOILER and drawing cage.

About 95 fms. of pitwork, embracing 8 and 11 in. pumps, with bottoms to match; 60 fms. of main rods, with strapping plates, stays, rolls, &c., complete; 10 ft. water-wheel, with dressing machinery attached.

Balance-bob, capstan and shears.	Smiths and miners' tools.
About 350 fms. of bridge rail.	Sheds.
500 fms. of chains.	New and old iron and timber.
Sundry tram wagons.	Buckets.
Skips, bucket rods.	Wheelbarrows.

And numerous other requisites for carrying on extensive mining operations.

N.B.—The mine has only been wrought to the depth of 48 fathoms below the adit, from which upwards of £6000 worth of lead has been returned, and in the bottom level the lode now presents indications that warrant deeper development.

The sett and plant can be seen by applying to Capt. THOMAS HODGE, on the mine; and further particulars obtained of Mr. JAMES SECCOMBE, Ash Park Villa, Liskeard; or of the Auctioneer, Liskeard.

A luncheon will be provided at One, and the sale to commence at Two o'clock.

Dated December 13th, 1866.

TO COLLIERY PROPRIETORS AND OTHERS.

MESSRS. J. AND T. HOLLAND have received instructions from the Gresley Wood and Swadlincote Colliery Company (Limited) to SELL, BY AUCTION, at the Granville Arms Hotel, Swadlincote, in the county of Derby, on Wednesday, Jan. 16, 1867, at One for Two o'clock precisely, either as a whole in One Lot, or in the following or such other lots as may be determined upon at the time of the sale.

LOT 1 will consist of all that VALUABLE ESTATE known as the GRESLEY WOOD COLLIERY, situate on the turnpike-road from Burton to Swadlincote, and within about four miles of Burton-upon-Trent, and about one mile from the Midland Railway, on the Leicester and Burton line. The estate comprises the valuable colliery, and 50 A. 3 R. 16 P. or thereabouts of wood land, with five valuable seams of coal thereunder, with the important lease held by the company, and including the whole of the BUILDINGS, the costly MACHINERY, and fixed PLANT, together with the gas works adjoining, and also a brick-yard, with all necessary fixed plant, the whole having communication by a branch line with the Midland Railway, and thus having direct access to all parts of the kingdom. Should this lot not be sold, the estate will be sold in the following or other lots.

LOT 2.—6 A. 2 R. 30 P. of FREEHOLD LAND, together with the COLLIERY PLANT and MINERALS under the whole of the estate, including the BUILDINGS, MACHINERY, fixed PLANT, GAS WORKS, and the leasehold portion held by the company, and also the junction and branch railway communicating with the Midland line.

LOT 3.—44 A. 0 R. 26 P. of VALUABLE FREEHOLD WOODLAND, with the FIRE and OTHER CLAYS thereunder to a depth of 100 yards from the surface thereof, the whole having an extensive frontage to the turnpike-road leading from Burton to Swadlincote. Should this lot not be sold, the estate will then be sold in the following lots:—

LOT 4.—A VALEABLE PLOT of FREEHOLD BUILDING LAND, containing 2 A. 3 R. 22 P., with an excellent frontage to the road leading from Burton to Swadlincote, of 277 yards or thereabouts.

LOT 5.—A similar plot adjoining Lot 4, containing 3 A. 0 R. 30 P., with an excellent frontage to the before-mentioned turnpike-road of 267 yards or thereabouts.

LOT 6.—6 A. 2 R. 37 P. of VALUABLE FREEHOLD LAND, including half the road between Lots 6 and 7, with the BRICK-YARD, KILNS, and fixed PLANT thereon.

LOT 7.—7 A. 2 R. 29 P. of VALUABLE FREEHOLD LAND, including half the road between Lots 6 and 7.

LOT 8.—5 A. 1 R. 30 P. of VALUABLE FREEHOLD LAND, including half the road between Lots 8 and 9.

LOT 9.—8 A. 3 R. 14 P. of VALUABLE FREEHOLD LAND, including half the road between Lots 8 and 9

LOT 10.—2 A. 3 R. 14 P. of VALUABLE FREEHOLD LAND, including half the road between Lots 10 and 11.

LOT 11.—6 A. 2 R. 10 P. of VALUABLE FREEHOLD LAND, including half the road between Lots 10 and 11.

The minerals under Lots 4, 5, 6, 7, 8, 9, 10, and 11 are reserved, but the whole of these lots will be sold, to include the fire and other clay thereunder to the depth of 100 yards from the surface thereof.

The timber and poles to be taken at a valuation, in the usual way.

Full particulars, with plans of the estate, will be ready on the 1st proximo, and may be obtained of the Auctioneers, Leicester; Messrs. STONE, PAGET, and BILLSON, solicitors, Leicester; Messrs. SHENTON and BAKER, architects; or Messrs. MACKENZIE, TREHERNE, and TRINDER, 77, Gresham House, Old Broad-street, London, E.C.

IMPORTANT SALE.

COPPER AND PYRITES MINES IN NORWAY.—On Tuesday, the 15th day of January next, at Eleven o'clock A.M., will be SOLD, BY PUBLIC AUCTION, in the office of the Sheriff (Sorenskriver) in Orkedalen, near Drontheim, in Norway, the mining property of Messrs. Pinto, Perez, Ashley, and Co., viz.:—AAMODT'S and HOYDALEN'S COPPER and PYRITES MINES, in MELDALEN, with MACHINERY and SUNDRIES, including a place for laying the ore, and a quay or pier on the beach at Orkedalen, with dwelling-houses at the mines and near the casting-house. The mines last year yielded about 6500 tons good pyrites, and 1000 tons rich copper ore.

For further particulars, apply to Messrs. HEINR. MEYER and Co., in Drontheim; Messrs. HARDING, WHINNEY, GIBBONS, and Co., No. 3, Bank-buildings, London, accountants; Messrs. W. MURRAY, SON, and HUTCHINS, 11, Birchin-lane, London, solicitors; and Mr. EDWARD ROSS BRYANT, Newcastle-on-Tyne.

COPPER MINES OF ST. JOAO DO DESERTO AND ALGARES, IN PORTUGAL.—The Government of H.M.F.M. the King of Portugal having ordered the EXPLORATION of the very VALUABLE MINES of ST. JOAO DO DESERTO and ALGARES, in the district of Beja, kingdom of Portugal, to be ADJUDICATED by PUBLIC COMPETITION, TENDERS are hereby SOLICITED for the same.—For particulars, apply at the Portuguese Legation, Glocester-place, Portman-square; the Portuguese Financial Agency, Finsbury Chambers, London-wall; or at the Portuguese Consulate-General, 4, Jeffreys-square, E.C.

N.B.—The time to send in the tenders is extended to the 30th January, and they are to be opened on the 1st of February, 1867.

TO CONTRACTORS AND OTHERS.

TO BE SOLD, BY PRIVATE TREATY, the undermentioned MATERIALS and PLANT, lying on a LINE of RAILWAY RECENTLY COMPLETED:—

6000 PERMANENT SLEEPERS—LARCH.
1100 TEMPORARY SLEEPERS.
5 miles PERMANENT FENCING—LARCH.
20 RUNNERS for TIP.
285 PLANKS.
29 HORSING BOXES.
44 SCAFFOLD POLES.
A number of TRESTLES,
1 set of SHEAR LEGS.
97 EARTH WAGONS, 40 of them quite new.
10 SPARE WHEELS, and 5 AXLES.
A quantity of SAWN TIMBER for wagon building.
137 NAVVY BARROWS; a lot of NEW WHEELS for same.
8 DOBBIN CARTS.
1 SAWING MACHINE and BENCH, SAWS, and TOOL BOX.
A large number of PICKS and NEW PICK HANDLES.
50 CROWBARS, and 20 LARGE HAMMERS.
8 LEVERS, and a quantity of PLATELAYERS' TOOLS.
2 RACKET BRACES, with DRILL.
3 BRACES, with a large number of DIES.
2000 yards PERMANENT METALS.
360 pairs of FISH PLATES.
78 bags of SPIKES and BOLTS.
A large quantity of WROUGHT IRON WORK for earth wagons.
4 LARGE FORCE PUMPS, new.
5 LEVEL CROSSING GATES, with iron work, complete.
2½ casks of PAINT.

A considerable portion of the above plant is quite new, the remainder has been but little used, and the whole is in good sound condition and fit for immediate use.

For particulars and to treat for the purchase of all or any portion apply to Mr. GEORGE FARMER, Montgomery, North Wales.

TO BE SOLD, cheap, a PORTABLE ENGINE of 14 horse power, double cylinder, of first-class construction, workmanship, and material. Winding gear to order. SECOND-HAND PORTABLES FOR SALE.—Apply to Messrs. BARROWS and CARMICHAEL, engineers, Banbury, Oxon.

IMPORTANT IRONWORKS IN MONMOUTHSHIRE FOR SALE.

THE CWMCELYN, BLAINA, AND COALBROOK VALE IRONWORKS, brand C ▢ C, TO BE SOLD, BY AUCTION, at the Auction Mart, London, at the end of February, 1867, at One o'clock, unless previously sold by private contract.

These Works comprise ONE THOUSAND ACRES of MINERAL PROPERTY, of which 440 are freehold, BLAST FURNACES, FORGES, and MILLS; FOUNDRIES, ENGINEERING SHOPS, and TIMBER SAW MILLS; all connected by a complete system of railways; together with LOCOMOTIVE ENGINES, extensive ROLLING STOCK, and every other requisite for carrying on the manufacture of iron. The forges and mills have averaged for six years a make of 39,000 tons of finished iron.

There is a population of 7000 to 8000 attached to the works, with ample cottage accommodation, including about 1000 houses belonging to the property.

The minerals are well opened and drained, and in quality and quantity equal to any in the district; the coal for steam purposes is unsurpassed.

The brand, or make, of the iron is well known in Great Britain, on the Continent, the United States, and the Colonies.

The works are distant twenty miles from Newport, and are intersected by the Monmouthshire Railway, affording a direct transit to the shipping port, and also to the inland markets.

The property is well worthy the attention of capitalists, who are invited to treat for the purchase by private contract.

The property may be viewed, and particulars with every information obtained, by application to Mr. F. LEVICK, Blaina Ironworks, near Newport, Monmouthshire; Messrs. QUILTER, BALL, and Co., 3, Moorgate-street, London; and Messrs. SECRETAN, WOODHOUSE, and COLBORNE, Newport, Monmouthshire.

SALE OF VALUABLE COLLIERIES.

TO BE SOLD, BY PRIVATE CONTRACT, all that VALUABLE PROPERTY known as BIRCHGROVE GRAIGOLA COLLIERIES, consisting of about FIVE HUNDRED ACRES of the BEST STEAM COAL (on the Government list), unworked, and situate about five miles from the port of Swansea.

The above collieries comprise two walled shafts, fitted on the newest and most improved principle, with FOUR powerful STEAM-ENGINES (two large, nearly new), with horizontal cylinders; and houses, buildings, workshops (complete), with residences, dwelling-houses, &c. All the eligible entensive contracts and business made over to the purchaser.

This property is intersected by the Swansea Vale Railway for upwards of a mile, and the two collieries communicate therewith by convenient sidings, and are in close proximity to the Great Western Railway.

Also the LEASE of wharf for shipping at Swansea, including all interest, wagons, trams, &c., of every description necessary, and in perfect order.

Also, the LEASE of about four hundred acres of surface land, in good farming order, with homesteads, stock, &c.

Apply to W. M. HACON, Esq., 31, Fenchurch-street, London; or to Mr. EVAN DANIEL, mining engineer and estate agent, Christiana-street, Swansea.

FOR SALE,—The DUNTERLIE MALLEABLE IRONWORKS, BARRHEAD. The whole MACHINERY, PLANT, and FURNISHINGS of the Dunterlie Ironworks, Barrhead, belonging to the sequestrated estate of Lawther and Co., Rolled Iron Manufacturers, there. This compact work is of recent erection, well laid down, and very suitable for the cheap production of about 200 tons of malleable iron per month, but with trifling expense the quantity could be greatly increased. The work adjoins the Caledonian Railway, within seven miles of Glasgow, and will shortly have direct communication with the coal and ironworks of Ayrshire. The property, which includes a commodious DWELLING-HOUSE and LAND adjoining, is held on lease, at a moderate rental. The lease will be renewed to a purchaser.

Offers will be received, and further particulars given, by WILLIAM FINLAY, No. 33, Renfield-street, Glasgow, the trustee on the estate; or by ARCHIBALD BROWNLIE, Writer, Barrhead, the agent in the sequestration.

TO BE DISPOSED OF, BY PRIVATE TREATY, the WESTMINSTER LEAD MINES.—These Mines are situated in the parish of LLANARMEN, and within six miles of the town of MOLD, FLINTSHIRE. The sett extends two miles in length on the course of the veins, and about half a mile in breadth, and have been worked by the present company for the last 25 years, and through the death of several of them the present survivors are under the necessity of winding-up the concern. The eastern portion of the sett is now in full operation, and on which are THREE STEAM-ENGINES erected, for the purpose of pumping, winding, crushing, &c., with the necessary plant, all of which are now in good working order.

Plans and sections can be viewed, and every information obtained, from Capt. FLOYD, on the mines.

TO CAPITALISTS, PUBLIC COMPANIES, AND OTHERS.—Particulars of a VALUABLE and EXTENSIVE SLATE AND COPPER PROPERTY FOR IMMEDIATE DISPOSAL BY PRIVATE CONTRACT, situate in NORTH WALES, within about four miles of shipping port, to which place a railway, running for nearly two miles parallel to and within a few hundred yards of the estate, will enable the produce to be conveyed at an almost nominal cost. There are upon the property four or five very EXTENSIVE SLATE VEINS and a VALUABLE COPPER MINE.

Three quarries have been opened, and the works in either case brought nearly to completion, several cargoes of excellent slates having been sold, as also a large quantity of very rich copper ore. There are about 800 yards of levels, 100 yards of shafts, about one mile of iron rails laid down, foreman's house, magazine, &c.

The lease is for a term of NINETY-NINE YEARS, WITHOUT ANY RENT OR ROYALTY WHATEVER. These unusually favourable terms very much enhance the value of the property. There are reports and opinions of seven or eight of the most eminent authorities as well as other opinions as to the capabilities and nature of the property. In addition to the three quarries alluded to another vein of slate has been opened upon and tested. The property offers unusual facilities for sub-letting in four or five divisions, exclusive of the copper, the quarries being far apart, and the existing works as advanced in either case, either division being sufficiently large for one company or firm.

The property possesses great natural advantages. Many thousands of pounds have been expended on the works, which have been carried out in a thoroughly substantial manner, the heavy expenditure of capital and inevitable loss of time attending the opening of all quarries having been already incurred. The terms of purchase will be made easy; one-third will be required in cash, half of which must be paid at once, and half at a date to be decided upon. Two-thirds of the whole purchase money may remain on mortgage of the lease for four or five years if desired.

Application in first instance to be made to "M. S. A.," Deacon's Library, Leadenhall-street, London.

RAILWAY CARRIAGE COMPANY (LIMITED)
ESTABLISHED 1847.
OLDBURY WORKS, NEAR BIRMINGHAM.
MANUFACTURERS of RAILWAY CARRIAGES and WAGONS, and EVERY DESCRIPTION of IRONWORK.
Passenger carriages and wagons built, either for cash or for payment over a period of years.
RAILWAY WAGONS FOR HIRE.
CHIEF OFFICES,—OLDBURY WORKS, NEAR BIRMINGHAM.
LONDON OFFICES,—6, STOREY'S GATE, GREAT GEORGE STREET, WESTMINSTER.

THE BEVERLEY IRON AND WAGON COMPANY (LIMITED).
MANUFACTURERS of RAILWAY CARRIAGES and WAGONS, WROUGHT and CAST IRON CARRIAGE and WAGON WHEELS, AXLES, HAMMERED USES, and HEAVY SMITHS' WORK for ENGINEERS, &c. BRASS and IRON FOUNDERS. MAKERS of PORTABLE FARM RAILWAYS, TURN-TABLES, CROSSINGS, SWITCHES, &c. AGRICULTURAL MACHINISTS. MANUFACTURERS of FIELD, ROAD, and BARN IMPLEMENTS, PATENT LORRY, CART, and CARRIAGE WHEELS, with WOOD or IRON NAVES. REAPING MACHINES, CLOD CRUSHERS, CORN MILLS, &c. SAW MILL PROPRIETORS. GENERAL TIMBER CONVERTERS for home and foreign RAILWAYS, STATIONS, BARRACKS, EXHIBITIONS, &c.
IRONWORKS BEVERLEY, YORKSHIRE.
JAMES DEWHIRST, Sec.

THE BIRMINGHAM WAGON COMPANY (LIMITED)
MANUFACTURE RAILWAY WAGONS of EVERY DESCRIPTION, for HIRE and SALE, by immediate or deferred payments. They have also wagons for hire capable of carrying 6, 8, and 10 tons, part of which are constructed specially for shipping purposes. Wagons in working order maintained by contract.
EDMUND FOWLER, Sec.
WAGON WORKS,—SMETHWICK, BIRMINGHAM.
*** Loans received on Debenture; particulars on application.
London Agent—Mr. E. B. SAVILE, 67, Victoria-street, Westminster, S.W.

STAFFORDSHIRE WHEEL AND AXLE COMPANY (LIMITED).
MANUFACTURERS of RAILWAY CARRIAGE, WAGON, and CONTRACTORS' WHEELS and AXLES, and other IRONWORK, used in the CONSTRUCTION of RAILWAY ROLLING STOCK.
CHIEF OFFICES,
3 and 4, EXCHANGE BUILDINGS, BIRMINGHAM.

PATENT FLEXIBLE TUBING, AND BRACTICE CLOTH FOR MINES,
MANUFACTURED BY
ELLIS LEVER,
PATENTEE,
WEST GORTON WORKS, MANCHESTER.

COAL CUTTING MACHINERY.—The WEST ARDSLEY COMPANY having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY to MAKE CONTRACTS for the CONSTRUCTION and USE of their MACHINES.

The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN the COST and IMPROVE the average SIZE of the COAL, to LIGHTEN the LABOUR, and also to MODIFY the SANITARY CONDITION of the MINE.

All communications to be made to Messrs. FIRTH, DONNISTHORPE, and BOWER, No. 8, Britannia-street, Leeds.

NOTICE.—The WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE, or USE ANY MACHINERY in the construction of which any such INFRINGEMENT is MADE.

NICHOLLS, MATHEWS, AND CO., ENGINEERS,
BEDFORD IRONWORKS, TAVISTOCK.

MANUFACTURERS of STEAM ENGINES of EVERY DESCRIPTION, made on the BEST and NEWEST PRINCIPLES. We beg more especially to call the attention of the public to the MANUFACTURE of our BOILERS, which have been tested by most of our leading engineers. PUMP WORK CASTINGS of EVERY DESCRIPTION, both of brass and iron. HAMMERED IRON and HEAVY SHAFTS of ANY SIZE. CHAINS made of the best iron, and warranted. MINERS' TOOLS and RAILWAY WORK of EVERY DESCRIPTION.

ALL ORDERS FOR ABROAD RECEIVE their BEST ATTENTION. NICHOLLS, MATHEWS, and Co. have had 20 years' experience in supplying machinery to foreign mines, and selecting experienced workmen to erect the same, wh re required.

Messrs. NICHOLLS, MATHEWS, and Co. have always a LARGE STOCK of SECOND-HAND MINE MATERIALS in stock, and at moderate prices.

Swan Rope Works.

GARNOCK, BIBBY, AND CO.,
CHAPEL STREET, LIVERPOOL,

MANUFACTURERS of FLAT and ROUND HEMP and IRON and STEEL WIRE ROPES for MINING, RAILWAY, and SHIPPING PURPOSES.

MANILLA ROPE of SUPERIOR QUALITY, FIFTY PER CENT. STRONGER and THIRTY PER CENT. CHEAPER than Russian hemp rope.

WIRE ROPE of FIRST QUALITY WIRE, and the HIGHEST STANDARD of STRENGTH.

Patent Flat and Round Wire and Hemp Ropes, &c.

JOHN AND EDWIN WRIGHT, PATENTEES,
CITY OFFICE, 19, LONDON STREET, E.C.
ESTABLISHED 1770.

Manufacturers of every description of
IMPROVED PATENT FLAT AND ROUND WIRE ROPES,
From the very best quality of charcoal iron and steel wire.
PATENT FLAT AND ROUND HEMP ROPES.
SHIPS' RIGGING, SIGNAL AND FENCING STRAND, LIGHTNING CONDUCTORS, STEAM PLOUGH ROPES (made from Webster and Horsfall's patent steel), WIRE, HEMP, FLAX, ENGINE YARN, COTTON WASTE, &c.
UNIVERSE WORKS, MILLWALL, POPLAR, LONDON.
UNIVERSE WORKS, GARRISON STREET, BIRMINGHAM.
No. 2, OSWALD STREET, GLASGOW.
CITY OFFICE, No. 19, LONDON STREET, LONDON.

BICKFORD'S PATENT SAFETY-FUSE OBTAINED the PRIZE MEDALS at the ROYAL EXHIBITION of 1851, at the INTERNATIONAL EXHIBITION of 1862, in London, and at the IMPERIAL EXPOSITION held in Paris, in 1865.

BICKFORD, SMITH, AND CO., of TUCKINGMILL, CORNWALL, MANUFACTURERS of PATENT SAFETY-FUSE, having been informed that the name of their firm has been attached to fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement:—

EVERY COIL of FUSE MANUFACTURED by them has TWO SEPARATE THREADS PASSING THROUGH the COLUMN of GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM SUCH TWO SEPARATE THREADS as THEIR TRADE MARK.

Gun-Cotton—By Royal Letters Patent.

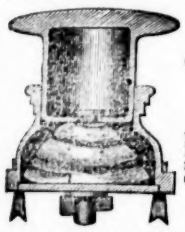
PRENTICE'S BLASTING GUN-COTTON PRODUCES NO SMOKE, and having been further REDUCED in PRICE is now by far the CHEAPEST as well as the SAFEST material which can be used in any description of mining or quarrying work.

Sample cases, together with every information, may be obtained from—

THOMAS PRENTICE AND CO.,
173, FENCHURCH STREET, LONDON, E.C.
AGENT—Mr. Thorne.

GUN-COTTON has been constantly used with great success in the tunnel of the Aberdeen Water-Works, lately opened by Her Most Gracious Majesty the Queen.

THOMAS TURTON AND SONS,
MANUFACTURERS OF

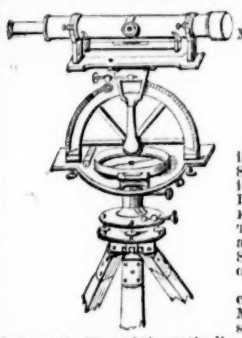


CAST STEEL for PUNCHES, TAPS, and DIES, TURNING TOOLS, CHISELS, &c.
CAST STEEL PISTON RODS, CRANK PINS, CONNECTING RODS, STRAIGHT and CRANK AXLES, SHAFTS and FORGINGS of EVERY DESCRIPTION.

DOUBLE SHEAR STEEL,	FILES MARKED
BLISTER STEEL,	T. TURTON.
SPRING STEEL,	EDGE TOOLS MARKED
GERMAN STEEL,	WM. GREAVES & SON.

Locomotive Engine, Railway Carriage and Wagon Springs and Buffers.

SHEAF WORKS AND SPRING WORKS, SHEFFIELD.
LONDON WAREHOUSE, 35, QUEEN STREET, CANNON STREET, CITY, E.C., Where the largest stock of steel, files, tools, &c., may be selected from.



A. JEFFERY,
MATHEMATICAL INSTRUMENT MAKER,
CAMBORNE, CORNWALL.

TO MINE MANAGERS, AGENTS, AND SURVEYORS.

GENTLEMEN,—I most respectfully beg to inform you that my Manufactory for Mine Surveying and Drawing Instruments is now in full operation, and THEODOLITES, DIALS, LEVELS, MEASURING CHAINS, ENGINE COUNTERS, ASSAY SCALES and WEIGHTS, PROTRACTORS, CASES of DRAWING INSTRUMENTS, and all kinds of SURVEYING and MAPPING INSTRUMENTS are kept in stock or made to order on the shortest notice.

Having been confined for several years exclusively to the manufacture of first-class Mine Surveying Instruments—which profession I trust I have to some degree mastered both practically and theoretically—I confidently venture to solicit an inspection of my manufactures, which cannot be surpassed for accuracy and general good quality by any firm either in the metropolis or the provinces.

All kinds of repairs and alterations made to instruments.

All work executed under my own direct supervision, and none but experienced assistants employed.

All work guaranteed as first-class for quality and accuracy, and, if found otherwise, forfeited. Soliciting your kind favours,

I remain, Gentlemen, yours obediently,
Camborne, July 28, 1866. A. JEFFERY.

BASTIER'S CHAIN PUMP.—This patent pump is the MOST EFFICIENT in existence for LIFTING ANY QUANTITY of WATER from ANY DEPTH. One lifting from a depth of 170 ft. may be seen at work daily, on application to the

SOLE LICENSEES,
MESSRS. J. JACKSON AND CO., ENGINEERS, 17, GRACECHURCH STREET, LONDON, E.C.,
Who SUPPLY PUMPS and LICENCES.
Communications to Mr. Bastier, the patentee, to be sent to the same address.
AGENT FOR THE COUNTIES OF NORTHUMBERLAND AND DURHAM, YORKSHIRE, DERBYSHIRE, AND NORTH STAFFORDSHIRE,
MR. THOMAS GREENER, MINING OFFICE, NORTHGATE, DARLINGTON.
AGENTS FOR SCOTLAND.
MESSRS. P. and W. MACLELLAN, 127 and 129, IRONGATE, GLASGOW.

RAILWAYS AND MINES.—Capitalists who seek safe and profitable investments, free from risk, should act only upon the soundest information. The market prices for the day are for the most part governed by the immediate supply and demand, and the operations of speculators, without reference to the *bona fide* merits of the property. Railways depend upon the traffic, expenditure, and capital accounts, the probabilities of alliance or competition with neighbouring companies, the creation of new shares, the state of the Money Market as affecting the renewal of debentures, and other considerations founded on data to which those only can have access who give special attention to the subject. Mines afford a wider range of profit than any other public securities. The best are free from debt, have large reserves, and pay dividends bi-monthly varying from £10 to £15 per cent. per annum. Instances frequently occur of young mines rising in value 400 or 500 per cent. But this class of security, more than any other, should be purchased only upon the most reliable information. The undersigned devote special attention to Railways and Mines, afford every information to capitalists, and effect purchases and sales upon the best possible terms. Thirty years' experience in mining pursuits justifies us in offering our advice to the uninitiated in selecting mines for investment.

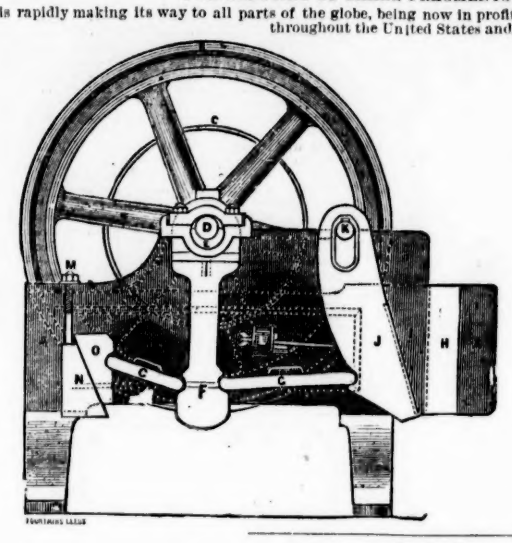
MESSRS. TREDINNICK AND CO.,
ST. MICHAEL'S HOUSE, CORNHILL, LONDON.

£250,000 HAVE BEEN PAID AS COMPENSATION
FOR ACCIDENTS OF ALL KINDS BY THE
RAILWAY PASSENGERS' ASSURANCE COMPANY
Invested capital and reserve fund, £50,000,
Annual income, £85,000,
An Annual Payment of £3 to £6 5s. secures £1000 in case of Death, or £6 per week while laid up by Injury.
For particulars apply to the Local Agents, at the Railway Stations, and
OFFICES,—64, CORNHILL, and 10, REGENT STREET.
W. J. VIAN, Sec.

IMMENSE SAVING OF LABOUR.
TO MINERS, IRONMASTERS, MANUFACTURING CHEMISTS, RAILWAY COMPANIES, EMERY AND FLINT GRINDERS, McADAM ROAD MAKERS, &c., &c.

BLAKE'S PATENT STONE BREAKER
OR ORE CRUSHING MACHINE,
FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.

It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England. Read extracts of testimonials:—



The Parys Mines Company, Parys Mines, near Bangor, June 6.—We have had one of your stone breakers in use during the last twelve months, and Captain Morcom reports most favourably as to its capabilities of crushing the materials to the required size, and its great economy in doing away with manual labour.
For the Parys Mining Company, JAMES WILLIAMS.
H. R. Marsden, Esq.

Ecton Emery Works, Manchester.—We have used Blake's patent stone breaker made by you, for the last 12 months, crushing emery, &c., and it has given every satisfaction. Some time after starting the machine a piece of the moveable jaw, about 20 lbs. weight, chilled cast-iron, broke off, and was crushed in the jaws of the machine to the size fixed for crushing the emery.
H. R. Marsden, Esq. —— THOS. GOLDSWORTHY & SONS.

Alkali Works, near Wednesbury.—I at first thought the outlay too much for so simple an article, but now think it money well spent. WILLIAM HUNT.

Welsh Gold Mining Company, Dolgelly,—The stone breaker does its work admirably, crushing the hardest stones and quartz. WM. DANIEL.

Our 15 by 7 in. machine has broken 4 tons of hard whinstone in 20 minutes, for fine road metal, free from dust. Messrs. ORD and MADDISON,
Stone and Lime Merchants, Darlington.

Kirkless Hall, near Wigan.—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton.
—— JOHN LANCASTER.

Ovoca, Ireland.—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore stone per hour. WM. G. ROBERTS.

General Frémont's Mines, California.—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or $75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered a third machine for this estate. SILAS WILLIAMS.

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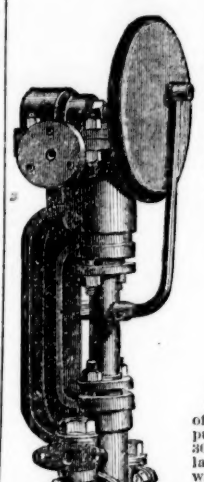
MEADOW LANE, LEEDS,
ONLY MAKER IN THE UNITED KINGDOM.

GIFFARD'S PATENT INJECTOR COMPLETELY SUPERSEDED BY
THE NEW PATENT DONKEY STEAM PUMP


ELEVATION.

[SPECIFICATION.]

This Pump is constructed on an entirely novel and simple principle, there being only a crank-shaft and fly-wheel of small size, the slide-valve being worked inside the steam chest by means of a steel crank and friction roller, thus dispensing with eccentric, rod, and straps. All the working parts are made of steel, hardened and polished. The cylinder and pump are in one casting, and bored throughout the body of the pump as well as the stuffing-box. The pump-ram is of the best gun-metal, being cast in one piece with the piston and piston-rod, and fitted accurately to the bored body of the pump, thus ensuring a nearly perfect vacuum in pumping. The stuffing-box glands are also of gun-metal polished. The valves and boxes are of the best gun-metal, the valves being of the spherical description, the covers fitted with brass cages, and the joints faced metal to metal. The slide-valve is of hard bell-metal. The steam-chest, with cylinder end, is in one piece, and may be removed without disturbing either steam or exhaust pipes. The whole engine may be taken to pieces and put together under steam in fifteen minutes, without disturbing any pipes whatever.

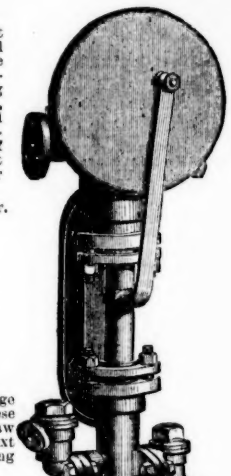
Size.	Ram. In.	Stroke. In.	Approx. h.p. boiler supplied.	Approx. gal. thrown p. hour.	Price.	Price of Giffard's Injector. In brass.	In iron.
No. 4	1¼	3	15	230	£10 10	£15	£10 10
5	1⅞	3	22	350	12 12	19	13 10
6	1⅞	4	30	500	14 14	23	16 10
7	2¼	4	40	700	17 0	27	19 10
8	2¼	5½	55	900	19 10	32	22 10
9	2½	5½	75	1150	22 10	36	25 10
10	2½	6¾	90	1420	25 10	40	28 10
11	2¾	6¾	110	1720	28 10	45	31 10
12	2¾	8	120	2000	31 10	50	34 10

N.B.—Sizes and capacities similar to Giffard's Injector. All guaranteed to work efficiently.

Terms: Nett Cash on Delivery in London.

Giffard's injector will not force water over 120° Fahr., while these pumps possess the great advantage of being able to pump boiling water. Giffard's injector will not draw water over 6 ft. deep, while these pumps draw water 15 ft., and by using one size larger than required for forcing the quantity will draw 30 ft. deep. These pumps begin to work at 15 lbs. per square inch; to work at a lower pressure the next larger size must be used. Sizes up to No. 10 kept in stock. Larger sizes, and special pumps for throwing water into tanks, or as fire-engines, can be made in a few days on application to the undersigned.

BROWN, WILSON, AND CO.,
80, CANNON STREET, E.C.; AND VAUXHALL IRONWORKS, S.


FRONT ELEVATION.

CREASE'S NEW AND IMPROVED PATENT BORING MACHINE.—In consequence of the various and IMPORTANT IMPROVEMENTS that an experience of several years has enabled the inventor to introduce into these machines, he can with the most perfect confidence recommend them for their increased DURABILITY, SIMPLICITY, ECONOMY, and SPEED to be attained by their adoption in DRIVING LEVELS or DRIFTS.

The inventor has made arrangements to supply them in any quantity, with warrantry. Orders executed according to their date of priority.
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SAFETY FUSE MANUFACTURERS,
ST. HELEN'S JUNCTION, LANCASHIRE

THE IRON TRADE CIRCULAR (RYLANDS').—The "IRON TRADE CIRCULAR" is eminently the Business Journal of the Mining Districts. Its information is authentic, unbiassed, and complete: comprising, not only the business news of the South Staffordshire District, but generally of the entire Mining Districts of the Kingdom. Annual subscription, £2 2s. (or 10s. 6d. quarterly in advance). Advertisements and orders to be addressed to Mr. GEORGE RYLAND, Union-passage, Birmingham.

[From the *Quarterly Trade Circular*, Pittsburgh, United States.]

"Among our foreign exchanges, there is one we had intended long since introducing to our readers, the 'Iron Trade Circular (Rylands'),' published weekly at Birmingham, England, at £2 2s. (postage free). To those who desire to be kept fully advised upon the foreign iron and hardware markets this publication is a valuable one, and we present its name to our readers, from conviction of its value to the American trade."

FINANCE, RAILWAYS, AND MINING IN THE UNITED STATES.—Persons in the United Kingdom and the colonies interested in the above should order THE STOCKHOLDER: MONITOR OF FINANCE AND INDUSTRY, MINING AND RAILWAY RECORD. Published every Tuesday morning, at No. 72, William-street, New York, U.S.A., 16 pages 4to, at $6 per annum for European subscriptions, postage prepaid; six months, $3. Accurate quotations of all important Bonds and Stock Securities in the United States; Government, State, City, Bank, Insurance, Petroleum, Mining, and other miscellaneous Joint-Stock Organisations, with the Financial Statements of the same; Notices of Payment of Interest and Dividends; with numerous papers on United States Finances, and the Railway and mining interests of that country. Inventors and parties dealing in railway materials and supplies, or mining machinery, will find this journal an excellent medium for advertising in the United States their manufactures and inventions. Subscriptions and advertisements received at the office of the London MINING JOURNAL, 26, Fleet-street, E.C., and by Mr. F. ALGAR, agent, 11, Clement's-lane, Lombard-street, London, E.C.

AMERICAN JOURNAL OF SCIENCE AND ARTS, published by Profs. SILLIMAN and DANA (aided editorially by Profs. Gray, Agassiz, Gibbs, Johnson, Brush, and Newton), at New Haven, Connecticut, every other month, commencing each year with January, in numbers of 140 pages each, making two volumes a year. Now in its forty-eighth year. The ninety-second volume (or forty-second volume of second series) commences on July 1, 1866. Messrs. Trübner and Co., 60, Paternoster-row, London, agents.

THE WREXHAM ADVERTISER, DENBIGHSHIRE, FLINTSHIRE, SHROPSHIRE, CHESHIRE, AND NORTH WALES REGISTER (Established 1848).—The town of Wrexham forms the centre of a large and important agricultural and mining district, which, from the increasing attention of capitalists, aided by the advantages afforded by new railways, is rapidly increasing in population, and bids fair to rival Wolverhampton in commercial importance. The Advertiser, partaking of the general prosperity, has largely increased its weekly circulation, 1000 more copies being now issued of each impression than at the close of 1864, and it now has a circulation more than double that of any other paper published in Denbighshire and Flintshire, and is the only medium by which advertisers can fully and effectually communicate with the public generally in those counties. Price 2d., stamped 3d. Published by Bayley and Bradley, Advertiser office, Wrexham.

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THE NEWCASTLE CHRONICLE AND NORTHERN COUNTIES ADVERTISER. (ESTABLISHED 1764.)
Published every Saturday, price 2d., or quarterly 2s. 2d.
THE DAILY CHRONICLE AND NORTHERN COUNTIES ADVERTISER.
Published every morning, price 1d.
Offices, 42, Grey-street, Newcastle-upon-Tyne; 50, Howard-street, North Shields; 195, High-street, Sunderland.

CHARLES RYLAND AND SONS' WEEKLY REPORT ON THE IRON TRADE.—The "WEEKLY REPORT ON THE IRON TRADE" is a reliable authority on all matters connected with the various trades of the Iron and Mining Districts of North and South Staffordshire, Cleveland District, North and South Wales, and Scotland. The list of subscribers comprises the names of the leading firms in the great centres of industry above referred to. It contains complete, authentic, and unbiassed information relative to the various branches of the metallic trades in all parts of the country.

Arrangements have been made for illustrating advertisements with block engravings, &c. Subscriptions, payable in advance:—One year, post free, £2 2s.; half-year, post free, £1 1s.; quarter-year, post free, 10s. 6d. Remittances may be made in postage stamps. Advertisements and orders to be addressed—"Charles Ryland and Sons, The Mount, Handsworth, Birmingham."

THE FLINT COUNTY CHRONICLE: A Mining, Agricultural, and General Advertiser for Mold, Flint, Rhyl, Holywell, Northop, Buckley, Hawarden, Saltney, and neighbourhood. The great success which has attended the publication of the "County Chronicle" justifies the proprietors in drawing the attention of advertisers to the special advantages it offers as an advertising medium. For the announcements of auctioneers, public companies, and tradesmen, it is the best in the county, having attained a circulation throughout Flintshire treble that of all the other so-called local papers combined. As a newspaper it contains full and impartial reports of all local events, and devotes particular attention to the mining and oil trade interests of the district—special articles appearing from week to week. All communications should be addressed "To the Editor," Broomfield Villa, Maesydderwen, Mold.

THE STOCKTON AND HARTLEPOOL MERCURY AND MIDDLESBOROUGH NEWS (published at Hartlepool) is eminently the organ of the Coal, Iron, and Iron Shipbuilding Trades in the extensive Mining and Maritime District of South Durham and Cleveland, with which it has been closely identified since its origin. The "Mercury" was for years the only newspaper published in South Durham and Cleveland, and is yet the only one published more than once a week. Advertisements to be forwarded to the publisher, Mr. JOHN H. BELL, Southgate, Hartlepool.

NERVOUS DEBILITY: ITS CAUSE AND CURE.—Before seeking aid from the so-called remedies without medicine, read this valuable work on the Treatment and Cure of Nervous and Physical Debility, Loss of Appetite, Pains in the Back, Spermatorrhœa, &c., with Plain Directions for Perfect Restoration to Health. Sent post free to any address, on receipt of two postage stamps. Letters of enquiry or details of case promptly answered.
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WONDERFUL MEDICAL DISCOVERY, demonstrating the true causes of Nervous, Mental, and Physical Debility, Lowness of Spirits, Indigestion, Want of Energy, Premature Decline, with plain directions for perfect restoration to health and vigour, WITHOUT MEDICINE. Sent free on receipt of two stamps, by W. HILL, Esq., M.A., Berkeley House, South-crescent, Russell-square, London, W.C.

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N.B.—Cases of recent infection cured in two days.

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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Total divs.	Per share.	Last paid.
1500	Alderley Edge, c, Cheshire*	10 0 0	—		8	7 8	Aug. 1866
200	Botallack, t, c, St. Just	91 5 0	—		488	15 0	May, 1866
10000	British Slate Company	9 0 0	—		9 per cent.		Sept. 1866
1000	Bronfloyd, l, Cardigan*	12 0 0	—		8	7 0	Aug. 1866
6400	Cashwell, l, Cumberland*	2 10 0	—		0	1 6	Aug. 1866
916	Cargoll, s-l, Newlyn	15 5 7	—		13	15 0	Feb. 1866
867	Cwm Erfin, l, Cardiganshire*	7 10 0	20		20	18 0	Oct. 1866
128	Cwmystwith, l, Cardiganshire	60 0 0	—		367	10 0	Oct. 1866
280	Derwent Mines, s-l, Durham	300 0 0	—		167	0 0	Oct. 1866
1024	Devon Gt. Consols, c, Tavistock†	1 0 0	—		1042	0 0	Nov. 1866
358	Dolcoath, c, t, Camborne	128 17 6	—	250 300	818	10 0	Dec. 1866
6144	East Caradon, c, St. Cleer†	2 14 6	5	4¼ 4¾	14	5 6	July, 1866
300	East Darren, l, Cardiganshire	32 0 0	—		136	10 0	Nov. 1866
128	East Pool, t, c, Pool, Illogan	24 5 0	—		387	10 0	Nov. 1866
5000	East Rosewarne, c, t, Gwinear	2 15 0	3⅜	¼ ½	0	10 6	Jan. 1866
1906	East Wheal Lovell, t, Wendron	3 9 0	9½	9 9¼	2	7 6	May, 1866
2800	Foxdale, l, Isle of Man*	25 0 0	—		69	0 0	Oct. 1866
5000	Frank Mills, l, Christow	3 18 6	—		3	5 6	Feb. 1866
15000	Great Laxey, l, Isle of Man*	4 0 0	—	17 18	5	15 0	Dec. 1866
5908	Great Wheal Vor, t, c, Helston†	40 0 0	15	14½ 15½	10	10 0	Sept. 1866
1024	Herodsfoot, l, near Liskeard†	8 10 0	32	30 32	39	0 0	Oct. 1866
6000	Hingston Down, c†	5 10 6	—		0	10 0	April, 1866
400	Lisburne, l, Cardiganshire, Wales	18 15 0	—		480	10 0	Sept. 1866
9000	Marke Valley, c, Caradon	4 10 6	3¾	3¾ 4	3	9 0	Oct. 1866
3000	Minera Boundary, l, Wrexham*	1 0 0	—		0	13 0	Mar. 1866
1800	Minera Mining Co. l, Wrexham*	25 0 0	—		205	8 0	Nov. 1866
20000	Mining Co. of Ireland, c, l, cl	7 0 0	17	17¼ 17⅜	—		July, 1866
40000	Mwyndy Iron Ore*†	3 5 0	3⅛		0	6 6	Mar. 1866
—	New Merrybent and Middleton*	3 10 0	3½		5 per cent.		Nov. 1866
600	Pant-y-Glien, s-l*	20 0 0	—		10 per cent.		May, 1866
200	Parys Mines, c, Anglesey*	50 0 0	—		157	10 0	Jan. 1866
1120	Providence, t, Uny Lelant†	10 6 7	23	20 22	81	17 6	Nov. 1866
512	South Caradon, c, St. Cleer†	1 5 0	340	320 340	539	10 0	Nov. 1866
6000	South Darren, l*	3 6 6	2		0	5 6	June, 1866
6000	Tincroft, c, t, Pool, Illogan†	9 0 0	9½	8½ 9½	18	6 0	Oct. 1866
3000	W. Chiverton, l, Perranzabuloe†	10 0 0	56	54 55	15	7 6	Nov. 1866
400	West Wheal Seton, c, Camborne†	47 10 0	125	116 120	464	14 0	Dec. 1866
512	Wheal Basset, c, Illogan†	5 2 6	65	60 65	622	0 0	Oct. 1866
1024	Wheal Friendship, c, Devon	20 0 0	—		300	0 0	Mar. 1866
4295	Wheal Kitty, t, St. Agnes	5 4 6	—		2	19 0	May, 1866
1024	Wheal Mary Ann, l, Menheniott†	8 0 0	12	11 13	60	7 6	Dec. 1866
2000	Wheal Rose, c, Scorrier	—	—		1	0 0	Feb. 1866
396	Wheal Seton, t, c, Camborne	58 10 0	—	127½ 132½	235	15 0	Dec. 1866
1040	Wheal Trelawny, s-l, Liskeard†	5 17 0	8		54	0 6	June, 1866
17000	Wicklow, c, i, Wicklow	2 10 0	23	22⅝ 23	45	15 0	Oct. 1866

BRITISH MINES WITH DIVIDENDS IN ABEYANCE.

1200	Bryn Gwyn, l, Mold*	9 0 0	—		3	3 6	Aug. 1865
2880	Clifford Amalgamated, c, Gwen	31 10 0	5	5½ 6	35	6 0	June, 1865
1055	Craddock Moor, c, St. Cleer	11 5 0	—		7	12 0	June, 1865
6000	East Carn Brea, c, Redruth	3 15 0	2¼	2 2¼	0	5 0	June, 1865
6000	New Birch Tor and Vitifer Cons. t	1 6 6	—		0	13 0	Oct. 1865
6000	West Basset, c, Illogan†	1 10 0	—		26	14 0	July, 1865
1024	Wheal Exmouth, l, Christow	—	—		—	—	Oct. 1865

FOREIGN DIVIDEND MINES.

15000	Cape Copper Mining*†	7 0 0	8¾	7¾ 8¼	2	12 6	April, 1866
21500	East Indian Coal, Calcutta	10 0 0	—		—	—	
25000	Fortuna, l, Spain*†	2 0 0	2½	2 2⅛	1	5 4	Oct. 1866
20000	Gen. Mining Assoc., Nova Scotia†	20 0 0	—	20 22	22	0 0	June, 1866
10000	Gonnesa, l,* [5000 £5 pd., 5000 £4 pd.]	—	—		7½ per cent. per annum.		
15000	Linares, t, Spain*†	3 0 0	—		11	6 4	Jan. 1865
50000	Panulcillo, c*†	3 0 0	3	2½ 3	10 per cent.		Yearly.
10000	Pontgibaud, s-l, France†	20 0 0	—	7 8	4	3 2	Dec. 1866
100000	Port Phillip, g, Clunes†	1 0 0	—	⅞ 1⅛	0	15 6	July, 1866
120000	Scottish Australian Mining Co.†	1 0 0	3/16		7½ per cent.		Dec. 1866
11000	St. John del Rey, Brazil*†	15 0 0	53	46 48 xd.	72	15 0	Dec. 1866
40000	Victoria (London) [25000 £1 pd., 25000 12s. 6d. pd.]				0	9 0	Jan. 1866
10000	West Canada Mining Company*†	1 0 0	—		0	19 6	May, 1866

FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

10000	Alten and Queenangen United, c*	4 10 0	—		4	5 0	Nov. 1853
20000	Australian, c, South Australia†	7 7 6	—		0	2 0	June, 1865
2464	Burra Burra, c, South Australia	5 0 0	—		325	0 0	Dec. 1864
12000	Cobre Copper Company, c, Cuba†	40 10 0	2	1 2	101	0 0	Jan. 1865
10000	Copiapo Mining Company, Chili†	16 10 0	—		6	18 0	Nov. 1862
100000	Don Pedro No. del Rey, Brazil*†	0 14 0	—		0	0 9	Dec. 1863
70000	English and Australian, c	2 10 0	7/8		1	12 6	Aug. 1864
68000	Kapunda Mining Co., Australia†	1 0 0	—		0	12 0	June, 1864
7927	Lusitanian (Portugal)†	3 0 0	—		1	7 0	June, 1865
103815	Mariquita and New Granada†	1 0 0	—		0	9 6	July, 1859
43174	United Mexican, s, Mexico	28 5 0	2	1½ 2	2	19 0	Sept. 1864
10000	Vancouver, cl*†	6 0 0	—		0	15 0	Nov. 1864
45000	Yudanamutana, c, S. A.*†	3 0 0	1⅝	1¼ 1⅜	0	5 0	Aug. 1863

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
35000	Alamillos, l, Spain*†	2 0 0	1¾		Fully pd.
100000	Anglo-Brazilian, g*†	0 10 0	—		Nov. 1866
40000	Brittany Silver-Lead Mines, France* [15750 18s. pd.]	—	—		
25000	Capula, s, Mexico*†	1 12 0	1⅛		Aug. 1866
30000	Chontales, g, s, Nicaragua*†	3 0 0	2⅞	2⅞ 2⅝	Oct. 1866
10000	Copiapo Smelting, Chili*	10 0 0	—		April, 1866
300	Copper Miners' Co. of South Australia* [150 £100 pd., 150 £70 pd.]				Nov. 1866
25000	East del Rey, g, Brazil*†	2 15 0	—		June, 1866
15000	El Chico Silver Mining and Reduction Company*	4 10 0	—		Jan. 1866
8000	English and Canadian Mining Company*	5 0 0	—		Fully pd.
50000	Frontino and Bolivia, g, New Granada*†	1 10 6	—	28, 38,	Aug. 1866
80000	Great Northern, c, South Australia*†	1 11 6	—		Sept. 1862
10000	Great Barrier Land, Mining, &c., New Zealand*	5 0 0	—		Fully pd.
12500	Nerbudda Coal and Iron*† [6000 £5 pd., 6500 £4 pd.]	—	—		Aug. 1865
50000	Nova Scotia Land and Gold*	1 15 0	—		Sept. 1865
15000	Otea, c, New Zealand* [5000 fully paid]	1 10 0	—		April, 1866
6000	Peel River Land and Mineral*†	100 0 0	—		Stock.
30000	Pestarena, g*†	2 0 0	2	1⅞ 2⅛	Aug. 1866
17500	Quebrada, c, Venezuela*†	10 0 0	1		Fully pd.
10178	Rhenish Consolidated, l [6000 £5 pd., 4178 £2 10s. pd.]	—	—		May, 1866
50000	Rossa Grande, g, Brazil*	0 7 6	—		April, 1864
15000	San Pedro del Monte, s, Mexico*	4 0 0	—		Sept. 1866
10000	San Roque, l, Spain	5 0 0	—		Fully pd.
1000	Schlossberg Colliery*	10 0 0	—		
30000	Val Antigoria, g*†	0 17 6	—		July, 1866
6000	Val Sassam, s, c, l*†	6 0 0	1		April, 1866
5000	Valgodemard Mining Company*	20 0 0	—		Fully pd.
50000	Vallanzasca, g, Italy*†	0 15 0	—		July, 1866
45000	Victor Emanuel, c, Italy*	1 0 0	—		Fully pd.
20000	Washoe, g	5 0 0	1½	1	Fully pd.
80000	Worthing, c, South Australia*†	1 0 0	½	¼ ½	Fully pd.
75000	Yorke Peninsula, South Australia	1 0 0	¼		Fully pd.

BANKS AND FINANCIAL COMPANIES.

Shares.	Banks.	Paid.	Last Pr.	Bus. done.
40000	Alliance*†	25 0 0	19	17 17½
40000	Australian Mort. Land and Finance†	5 0 0	5	4¾ 4⅞
30000	Australasia†	40 0 0	63	61 63
10000	Bank of Egypt†	25 0 0	31	29 31
50000	Bank of New Zealand†	10 0 0	18½	17 19
25000	Bank of Otago*†	10 0 0	6	4 6
15000	Bank of Queensland*†	25 0 0	10	
20000	Bank of Victoria, Australia†	25 0 0	39	37 39
50000	Brazilian and Portuguese*†	10 0 0	9	8 9
8915	Canada Company†	32 10 0	80	75 80
50000	Canadian Loan and Investment*†	2 10 0	1½	
40000	Chart. Bank India, Aust. & China†	20 0 0	16½	15 15½
30000	Char. Merc. India, Lond. & China†	25 0 0	35	30 32
50000	City†	10 0 0	16	14 16
20000	Colonial†	25 0 0	36	35 37
40000	Company of African Merchants.*†	3 0 0	3	2½ 3
150000	Consolidated Bank*†	4 0 0	5	4 4½
200000	Credit Foncier and Mobilier of England*†	8 0 0	3	2¼ 2¾
10000	Discount Corporation*†	20 0 0	—	
20000	East London*†	5 0 0	4	2 3
30000	English, Scottish, & Aust., Chart.†	20 0 0	17½	16 17
20000	English and Swedish*†	20 0 0	14½	13 15
250000	General Credit and Finance of London*†	6 0 0	4¼	2⅝ 2⅞
20000	Imperial Bank*†	20 0 0	24	22 24
150000	International Financial Society*†	5 0 0	3⅛	2¼
300000	International Land Credit*†	6 0 0	2½	2 3
4000	London African Trading*†	10 0 0	5	3 5
50000	London Chartd. Bank of Australia†	20 0 0	22½	21 22
37500	London and County†	20 0 0	65	63 65
40000	London Financial Association*†	25 0 0	9¼	5¾ 6¼
72000	London Joint-Stock†	15 0 0	42	41½ 42½
10000	London and South-Western*†	20 0 0	18	
50000	London and Westminster†	20 0 0	94	93 95
50000	Mercantile and Exchange*†	12 10 0	—	
17156	Metropolitan and Provincial*†	20 0 0	10½	9½ 10½
20000	Mineral Rights Association*	1 0 0	—	
20000	National of Australia†	4 0 0	6	5 6
20000	National of Liverpool*†	15 0 0	—	15 17
40000	National†	30 0 0	70	65 67
50000	New South Wales†	20 0 0	46	44 46
40000	Union of Australia†	25 0 0	50	49½ 49¾
80000	Union of London†	15 0 0	45	43 45

PROGRESSIVE MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
4000	Ballacorkish, l, of Man, l, c*	1 10 0	—		Oct. 1866
3000	Bedford Unit., c, Tavistk.*	2 6 8	—		
3200	Bedol Aur, l, Holywell	1 2 0	—		July, 1866
500	Billins, l, Flint	30 0 0	—		Fully pd.
1000	Blaendyffryn, s-l*	2 0 0	—		Mar. 1866
1248	Boscaswell, t, c, St. Just	7 1 0	—		Sept. 1866
5000	Bottle Hill, t, Plympton	1 14 6	—		June, 1866
200	Brynford Hall, l, Flint	28 0 0	—		Jan. 1866
5000	Bryn Gwlog, l, Flint	9 0 0	—		June, 1864
30000	Caldbeck Fells, l, Cumber.*	1 5 0	—		Sept. 1866
1000	Camborne Consols, c	18 10 0	—		Feb. 1864
4600	Camborne Vn. & Wh. Fran.	11 8 10	—	⅞ 1⅛	July, 1866
11000	Cape Cornwall, t, c* [8000 £2 10s. pd., 3000 10s. pd.]				Oct. 1866
2000	Caradon & Phœnix Cons.*	0 12 0	—		April, 1865
914	Caradon Cons., c, St. Cleer	31 3 6	—		Nov. 1866
1000	Carn Brea, c, t, Illogan	25 0 0	—		Nov. 1866
6000	Carn Camborne, c, Cambn.	2 0 6	22s.	20s. 21s.	Oct. 1866
5000	Carnarvonshire, l*	4 0 0	5¼	4¾ 5	Fully pd.
4005	Cardigan Cons.* [1000 £5 pd., 3005 £4 5s. pd.]				April, 1866
600	Cardiganshire, l*	17 10 0	20		Sept. 1866
20000	Carysfort [3200 £2½ pd., 16800 £1⅜ pd.]				Mar. 1865
68000	Castell Carn Dochan, g*	0 8 6	—		
2500	Cefn Cilcen, l, Flint*	2 18 0	—		Aug. 1866
2500	Central Minera, l*	3 12 6	—		Nov. 1866
16000	Central Snailbeach l	1 0 0	—		Fully pd.
3000	Chiverton, t, Perranzabu	9 2 6	7¼	6¾ 7¼	Nov. 1866
3000	Chiverton Moor, l, Perranz.	5 18 6	4¾	4½ 5	Nov. 1866
16000	Coolartra & Bond* [5300 £1 pd., 10700 16s. pd.]				Feb. 1865
256	Condurrow, c, t, Camborne	76 10 0	40		
5000	Connorree, c, sul, Wicklow*	1 0 0	½	10s. 11s.	Fully pd.
2450	Cook's Kitchen, c, Illogan	19 14 9	7	6 7	July, 1866
1024	Copper Hill, c, Redruth	12 10 0	—		June, 1866
6500	Cornish Clay and Tin*	1 0 0	—		Fully pd.
6000	Cornwall Great Consols	1 8 0	—		May, 1866
861	Crane, c, Camborne	33 9 6	—		Dec. 1866
12000	Crelake, c, Tavistock	3 8 0	—		July, 1866
6000	Cuddra, t, St. Austell	4 18 6	—		June, 1866
35000	Dale, l, North Stafford	1 0 0	3s.	2s. 3s.	Fully pd.
1000	Darren, l, Cardigan*	12 4 0	—		Oct. 1866
5000	Devon Great Maria*	7 0 0	—		May, 1866
4000	Devon Wheal Frances, c	1 4 6	1⅞		Sept. 1866
1024	Devon Wheal Lopes, c*	17 0 0	—		July, 1866
12800	Drake Walls, t, Calstock	2 5 0	½	⅜ ½	Dec. 1866
656	Ding Dong, t, Gulval	48 14 6	—		Sept. 1865
20000	Dolfrwynog, g*	0 15 0	—		June, 1864
25000	Dundalk, Ireland, l*	0 12 6	—		April, 1866
3000	Dyfngwm, l, Wales	13 7 0	—		June, 1866
1000	Eaglebrook, l*	17 19 0	—		Feb. 1865
512	East Basset, c, Redruth†	29 10 0	21	20 22	
1000	East Basset and Grylls, t	3 5 0	—		July, 1865
6000	E. Bottle Hill, t, Plympton	0 6 6	—		Oct. 1865
4096	East Brookwood, Holne	2 8 8	—		July, 1866
2000	East Buller, c, Gwennap	2 0 0	—		Mar. 1865
4000	East Chiverton, l, Perranz.	2 6 9	—		Sept. 1866
2048	E. Falmouth, s-l, Kenwyn.	5 0 6	—		April, 1864
6000	E. Grenville, c, Camborne	3 3 6	2⅛	1⅞ 2	Nov. 1866
4000	E. Gunnislake & S. Bed. c	9 0 6	—		Aug. 1866
6000	East Holyford, c, Ireland*	3 0 0	—		Oct. 1866
6145	East Jane, s-l, Cardinham	2 17 6	—		April, 1865
6000	East Laxey, l, Isle of Man*	2 10 0	—		Dec. 1865
1000	East Moor, s	0 5 0	—		Aug. 1866
3986	E. Providence, t, Uny Lel.	4 19 9	—		Nov. 1866
5000	E. Tresavean, c, Gwennap	0 10 0	—		May, 1865
6000	East Snailbeach, l, I. of Man*	2 0 0	—		Dec. 1864
5610	East Seton, c, Camborne	0 11 0	—		Oct. 1865
9000	E. St. Just, t* [6000 £3 10s. pd., 3000 £1 10s. pd.]				Nov. 1866
256	East Tolgus, c, Redruth	96 0 0	—		April, 1866
1190	E. Wh. Agar, c, St. Cleer	12 17 0	—		Jan. 1865
4000	E. Wh. Russell, Tavistock†	11 14 0	3¼	2½ 2¾	Oct. 1866
15000	Ellen Unit., c, t, St. Agnes*	1 0 0	—		Nov. 1866
6000	Fortescue Consols, c	0 12 6	—		
940	Fowey Con., c, Tywardreath	5 1 6	—		June, 1866
6000	Furze Hill Wood Con. Buckl.	1 16 0	—		Feb. 1866
10000	Fursdon, c* [5000 £1 10s.]	—	—		Mar. 1865
1026	Garden, t, Morvah	5 12 9	—		Mar. 1865
4096	Garlidna Unit., t, Wendron	5 7 7	—		Feb. 1866
4000	Gawton, c, Tavistock	3 5 6	—		Feb. 1866
6000	Gen. Min. Co. for Ireland, c	4 0 0	3		
40000	Glasgow Caradon c* [30000 £1 pd., 10000 10. pd.]				Sept. 1866
6144	Gonamena, c, St. Cleer	5 16 6	—		Dec. 1866
6000	Gothic, s-l, Cardigan*	2 10 0	3	2¾ 2¾	Fully pd.
486	Grambler and St. Aubyn†	70 0 0	—		Nov. 1866
4096	Great Caradon, c, St. Ives	3 11 0	½	¼ ½	Nov. 1866
3000	Gt. East Lovell, t, Helston	2 1 0	—		Nov. 1866
5000	Great Mona, l, Isle of Man*	3 10 0	—		June, 1866
5000	Great North Downs, c	5 18 0	2¼	2 2¼	Oct. 1866
12500	Gt. No. Laxey (Isle of Man)*	0 10 0	1½	1 1½	Feb. 1865
6000	Great Retallack, s-l, b	1 19 0	½	7s. 9s.	Oct. 1866
6000	Great South Chiverton, s-l.	1 9 6	—		July, 1866
6000	Gt. So. Tolgus, c, Redruth	0 19 6	⅜	¼ ½	Aug. 1866
3000	Great West Chiverton, t	1 0 0	—		June, 1864
3313	Great Wheal Baddern, t	7 17 6	—		June, 1863
6000	Gt. Wh. Busy, c, t, Kenwyn	16 19 6	—		July, 1866
1798	Gt. Wh. Fortune, t, Breage	26 15 6	5	4 5	Sept. 1866
119	Great Work, t, Germoe	100 0 0	—		
2500	Grit and Stapeley, l*	10 0 0	—		July, 1864
10240	Gunnislake (Clitters'), t, c	4 15 0	—		Aug. 1866
6068	Gwydyr Pk. Con., Llanrwst	1 12 6	—		Aug. 1866
6000	Hallenbeagle, c, Kenwyn	2 13 0	7s.	5s. 7s.	Nov. 1866
6400	Harwood, l, Durham*	0 6 0	—		Sept. 1864
5000	Havan, l, Cardigan*	4 15 0	—		Mar. 1866
6000	Illogan, t, c	0 19 6	—		June, 1866
6000	Lady Bertha, c, Tavistock	3 19 6	—		Oct. 1866
3000	Leawood, c, l, Lydford	3 3 6	—		June, 1866
1019	Leeds and St. Aubyn, t, c	19 13 4	—		Mar. 1866
963	Lelant Cons, t, Uny Lelant	35 0 0	—		Mar. 1863
160	Levant, c, t, St. Just	10 8 1	—		June, 1866
6000	Levant United, St. Just	0 10 0	—		
1024	Lovell Consols, t	—	—	3¼	3 3¼
2000	Lower Park, l, Denbigh*	3 11 0	—		Jan. 1864
3000	Maes-y-Safn, l*	20 0 0	—		Jan. 1866
6000	Maudlin, c, Lostwithiel	4 7 0	—		May, 1865
5000	Merllyn, l, Flint	3 15 6	—		Jan. 1866
3000	Minera Western Boundry*	0 2 6	—		Sept. 1863
4975	Molland, c, South Moulton	3 13 0	—		Aug. 1865
640	Mount Pleasant, l, Mold	4 0 0	—		
1024	Nangiles, t, c, Kea	26 5 0	15		Oct. 1866
4000	Nanteos, l, Cardigan*	1 0 0	—		Fully pd.
512	Nant Minera, l*	6 10 0	—		Jan. 1865
250	Nanty Mines, l, Montgom.	30 0 0	—		Aug. 1866
6000	New Clifford, c, Gwennap*	2 0 0	—		Mar. 1866
24000	New Cornish [12000 £1 pd., 12000 15s. pd.]				Sept. 1866
6400	N. Crow Hill, l, St. Stephen	3 1 0	—		Aug. 1866
6514	New E. Russell, c, Tavistk.	0 10 6	—		Sept. 1866
6400	Nether Hearth, l, Dufton	1 1 0	—		May, 1865
400	New Hendra, t, c, Breage	14 11 0	—		Mar. 1866
6400	New Pembroke, t, c	1 0 6	—		Nov. 1866
6000	New Tamar, s-l	—	—		⅞ 1⅛
5755	New Treleigh, c, Redruth	4 8 0	—		May, 1866
960	New Trevenen, t, Wendron	8 14 0	—		May, 1866
470	Newtonards Min. Co. Down	50 0 0	—		
4096	New Wheal Lovell, t	1 9 0	—		Aug. 1866
400	New Wh. Seton, c, Cambn.	53 15 0	40	30 35	Sept. 1866
2000	New Wheal Towan, c, t	1 10 0	—		July, 1866
16000	North Devon, s-l*	0 16 0	—		July, 1866
5000	No. Dolcoath, c, Camborne	4 0 0	—		Oct. 1866
6000	North Downs, c, Redruth	4 11 4	—		Aug. 1866
1361	No. Grambler, c, Redruth	6 19 9	—		Dec. 1866
16000	N. Hallenbeagle [8000 £1 pd., 8000 8s. 6d. pd.]				July, 1865
6000	North Jane, t, s-l, Kenwyn	3 0 6	—		Sept. 1866
2000	North Levant, t, c, St. Just	10 8 0	—		Sept. 1866
20000	Nth. Minera, l, Wrexham*	1 0 0	—		Fully pd.
4000	N. Phœnix, c, Linkinghorne	4 4 0	—		May, 1864
6400	North Pool, c, Illogan	4 18 6	—		Nov. 1866
700	No. Roskear, c, Camborne	48 1 0	4	3 4	Nov. 1866
2000	No. Shepherds, l, Newlyn	6 0 0	—		July, 1866
5936	No. Treskerby, c, St. Agnes	1 9 0	2¾	2⅜ 2⅝	
6000	North Wheal Basset, c, t	5 0 0	—		April, 1866
5610	North Wheal Crofty, c	3 11 3	3⅛	2⅞ 3	July, 1866
6144	N. Wh. Robert, Smp. Spiney	4 6 5	—		Feb. 1866
12288	Okel Tor, c, Calstock	2 7 4	—		Aug. 1866
8000	Old Gunnislake, c, Calstock	2 10 0	—		Aug. 1866
5000	Orsedd, l, Flintshire	0 0 8	—		
6400	Par Consols, c, St. Blazey†	2 2 0	—		Nov. 1866
6000	Par and St. Blazey Cons. t, c	1 18 9	—		Sept. 1866
8465	Pedn-an-drea, t, Redruth	5 10 6	—		July, 1866
5000	Pendeen Consols, c, St. Just	5 15 0	—		Oct. 1866
4000	Penhale Wheal Vor, t, c	2 15 0	—		Oct. 1866
5000	Penhalls, t, St. Agnes	3 0 0	—		May, 1866
15000	Penhale and Lomax, s-l	1 10 0	—		Oct. 1866
512	Penhallow Moor, s-l	9 10 0	—		Sept. 1865
6000	Penralt, s-l, Merioneth*	2 7 0	—		Feb. 1865
200	Pentre Lygan, l*	30 0 0	—		May, 1853
1772	Polberro, t, St. Agnes	15 0 0	—		Fully pd.
512	Polbreen, t, St. Agnes	8 0 0	—		Aug. 1860
10000	Prince Arthur Consols, l*	2 0 0	—		Fully pd.
12800	Prince of Wales, t, Calstock	0 11 6	27s.	23s. 25s.	Nov. 1866
6000	Prosper Un., t, c, St. Hilary	8 14 0	2¼	2 2¼	July, 1866
12000	Redmoor, c, t, Callington	1 9 6	—		Feb. 1866
6000	Reinnie Laxey, l, I. of Man*	4 0 0	—		Mar. 1865
5000	Rhafna, l, Carnarvon*	0 11 0	—		Dec. 1864
1024	Rose and Chiverton Untd.	5 0 0	5¾	5¼ 5¾	Nov. 1866
2000	Rosecliff and Tolcarne*	5 0 0	—		
3973	Rosewarne Consols, c	5 2 6	—		Feb. 1866
5915	Rosewall Hill and Ransom	3 0 0	3/8	½ ¾	Aug. 1866
3848	Rosewarne United, c, t	4 0 4	—		July, 1866
20500	Snaefell, l, Isle of Man*	1 0 0	—		Fully pd.
400	Silver Brook, s-l, Carmar.*	2 0 0	—		July, 1865
4096	Sithney Wheal Metal, t	4 5 6	—		Oct. 1866
12000	Sortridge Cons., c, Tavist.†	1 14 6	—		Oct. 1866
512	South Basset, c, Gwennap	22 0 8	4	3½ 4	Feb. 1866
1024	South Callington, s-l	5 12 6	2½	2 2½	July, 1865
6000	South Carn Brea, c, Illogan	8 10 6	—		Jan. 1866
3000	So. Chiverton, s, l, Perran.	5 15 0	—		June, 1866
2599	South Cornwall, t*	13 0 0	—		Dec. 1866
6138	So. Condurrow, t, c, Camb.	3 11 0	3/4	11s. 13s.	May, 1866
2283	South Crenver, c, Crowan	12 9 0	—		Oct. 1865
6000	S. Dolcoath & Carnarth. Con.	2 16 6	—		Aug. 1865
5000	So. Exmouth, l, Christow	2 17 0	—		Feb. 1866
5000	So. Foxdale, l, I. of Man*	3 10 0	—		Mar. 1865
1024	So. Herodsfoot, l, Liskeard	9 10 0	—		April, 1866
4000	South Minera, l, Wrexham*	5 0 0	—		Dec. 1865
96	South Pant-y-Gof, l	27 0 0	—		May, 1864
30210	South of Scotland*	0 17 6	—		Sept. 1866
937	So. Wh. Crofty, c, Ill